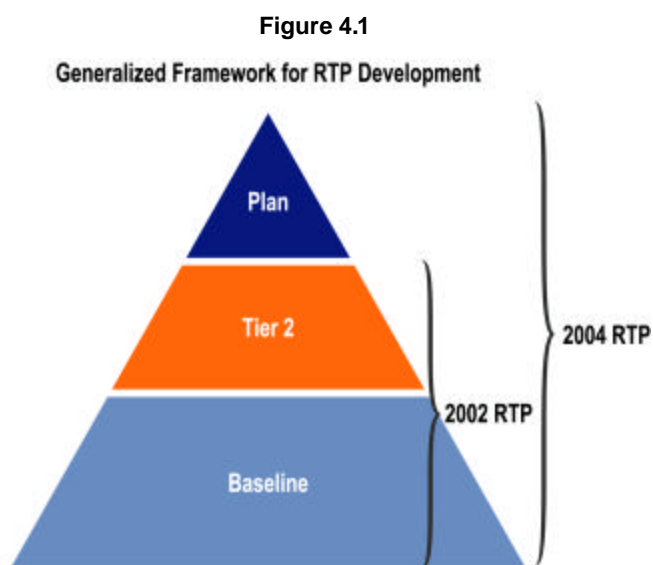


## CHAPTER 4 POTENTIAL SOLUTIONS

This chapter describes key plans and programs that address the challenges outlined in Chapter 2 and the recommended funding strategy to meet the Region's needs and implement the 2004 RTP.

The structure of proposed projects and strategies that constitute the 2004 RTP is depicted in Figure 4.1. The Plan can be viewed as multiple layers, or tiers, of transportation projects and strategies, beginning first with the existing transportation system and ending with the proposed Plan improvements. While the RTP includes all of these tiers, it is useful to examine them independently for analysis purposes. These tiers are described as follows:

- ❖ Baseline (No Project) represents a future scenario in which only projects in the 2002 Regional Transportation Improvement Program (RTIP) that have State and federal environmental clearance by December 2002 are assumed to be completed. The Baseline also assumes a future in which there are no changes in land-use from established general plans. The Baseline functions as the “No Project” alternative used in the RTP Program Environmental Impact Report and provides a useful reference point, as it represents a future without the proposed RTP. The full listing of Baseline projects is contained in the Technical Appendix.
- ❖ Tier 2 describes the remaining projects in the 2002 RTIP that are not included in the Baseline scenario. These are recognized as committed projects, and the RTP gives them first-funding priority after the Baseline. The full listing of Tier 2 projects is contained in the Technical Appendix.
- ❖ Plan represents the final layer of transportation improvements, above and beyond Tier 2. These projects and strategies represent the focus of this chapter, and are discussed in detail. The full listing of Plan projects is contained in the Technical Appendix.



From the long-range planning standpoint, Baseline (No Project) and Tier 2 projects are considered as fully committed. These two tiers combined form the bulk of the short-range

portion of the Plan, primarily addressing the first ten years of the Plan. These include hundreds of projects and strategies, including the following highlights:

- ❖ Investments of \$57.7 billion in transit operations and maintenance.
- ❖ Investments of \$18.3 billion in roadway operations and maintenance.
- ❖ Major transit corridors, including the Metro Orange Line in the San Fernando Valley, Eastside Light Rail, Exposition Light Rail to Santa Monica, Wilshire Transitway, Centerline in Orange County, and San Jacinto commuter rail extension in Riverside County.
- ❖ Rapid bus expansion on 26 lines, including South Broadway, Vermont, Florence, Van Nuys, Sepulveda, Santa Monica, Western, San Fernando, and many others.
- ❖ HOV expansion and gap closures on SR-14 near Palmdale, I-5 in the San Fernando Valley, I-405 on the Westside, I-5 and I-605 connecting Los Angeles and Orange Counties, I-10 and SR-60 in the San Gabriel Valley, SR-22 in Orange County, SR-60 and I-215 in Riverside County, and I-215 in San Bernardino.
- ❖ HOV connectors at the I-5/SR-14, SR-57/SR-60, and SR-55/I-405 interchanges.
- ❖ Mixed flow expansion on SR-23, SR-118, and US-101 in Ventura County, I-5 connecting Los Angeles and Orange Counties, I-15 and US-395 in the High Desert area of San Bernardino, and SR-60 and SR-74 in Riverside County.
- ❖ Toll road extension and widenings in Orange County.
- ❖ Brawley Bypass and other expressway improvements in Imperial County on SR-7, SR-98, and SR-111.

**Figure 4.2**

### System Management Philosophy



A complete project listing for these categories is provided as part of the RTP Technical Appendix. The real discretion that the RTP process has is over the projects and strategies beyond Tier 2. These projects are represented by the small triangle on top of the pyramid. Therefore, the focus of this chapter is solely on projects and strategies that are in this category, which are discussed in the remainder of this chapter.

## System Management: Getting the Most out of the System

Given the challenges described in Chapter 2, the 2004 RTP relies on a number of strategies that range from an increased focus on operational strategies to land-use integration, and to strategic system expansion investments. This comprehensive approach is referred to as System Management.

The 2004 RTP has embraced this philosophy to maximize returns on expected transportation investments. This philosophy is depicted in Figure 4.2. As this figure shows, system expansion (depicted by the top of the triangle) is no longer the primary transportation investment to provide improved mobility. Use of a synergistic portfolio of strategies is required today and in the future. System management relies on more comprehensive data and advanced tools to help identify the most cost-effective investments in the areas of preservation, demand management, transportation management systems, physical operational improvements, and system expansion. We must preserve our aging infra-structure, get the most out of our current multimodal system, and strategically expand it to maximize the return on our scarce investments. This is a focus of the 2004 RTP. Investments in Intelligent Transportation Systems (ITS) technology and system integration to achieve system management goals are identified in Table 4.1.

**Table 4.1**  
**ITS Capital Investments**

<i><b>County</b></i>	<i><b>Investment</b></i>
Imperial	\$0
Los Angeles	\$676,500,000
Orange	\$29,000,000
Riverside	\$25,000,000
San Bernardino	\$48,500,000
Ventura	\$80,000,000
<b>Regional Total</b>	<b>\$859,000,000</b>

### Preservation – Protecting Our Infrastructure

A key aspect of System Management is protecting our investment in the current transportation infrastructure. The Region has invested billions of dollars in developing its multi-modal transportation system and must protect these investments for current and future generations.

This RTP sets aside \$6.5 billion of the additional funds identified for infrastructure preservation. Table 4.2 presents the incremental preservation investments over and beyond the Baseline by county. Note that the incremental preservation investments shown in Table 4.2 are directed to arterials and the State Highway System only, which depend on diminishing gasoline tax receipts. Therefore, additional funding is needed to address diminishing tax

receipts and the needs of the Region's aging infrastructure. Transit preservation funding is not projected to decline, and adds up to over \$20 billion of committed expenditures through 2030.

**Table 4.2**

### **Investment in System Perservation**

<b>County</b>	<b>State Highway</b>	<b>Arterial</b>
Imperial	\$154,000,000	\$3,500,000
Los Angeles	\$2,830,000,000	\$200,000,000
Orange	\$655,000,000	\$105,000,000
Riverside	\$486,000,000	\$66,000,000
San Bernardino	\$1,561,000,000	\$103,500,000
Ventura	\$264,000,000	\$28,500,000
Regional	\$5,950,000,000	\$506,500,000

#### **Operational Strategies – Getting the Most Out of Our Existing System**

The Region has the responsibility to get the most out of its available system. The Region must maximize the productivity of its transportation system. This is especially true for the State Highway System.

For example, due to intensive weaving and merging at freeway interchanges, our freeway system performs at significantly less than optimal productivity on many of its segments. These productivity losses are strongly related to the bottlenecks we all experience on a daily basis.

Accidents lead to similar, if not more extensive, productivity losses for similar reasons. Closed lanes also lead to weaving and merging that reduce the system's productivity.

Fortunately, the combination of small physical improvements (e.g., auxiliary lanes that extend the merging range) and technology deployments (e.g., advanced ramp metering) offer us affordable solutions to restore some of this lost productivity. These technology deployments are often referred to as Intelligent Transportation Systems, or ITS.

The combination of operational investments reduces delays and the duration of congestion, and improves the predictability of travel time.

These types of investments are currently being embraced around the State and the country. The associated investments are modest in comparison with almost any other type of investment, and this RTP funds them at higher levels than at any time in the past. Primary categories for operations spending include:



- ❖ Flow-improving infrastructure modifications – also referred to as physical operational improvements that reduce the concentration of weaving and merging. These include auxiliary lanes, freeway interchange modifications, ramp widening, HOV-to-HOV connectors and drop ramps for HOV that help carpoolers avoid weaving across the freeway to get to the carpool lanes.
- ❖ Freeway service patrol to facilitate removal of stalled vehicles.
- ❖ Transportation management systems, including:
  1. Incident management systems that help identify accidents as they occur and clear them faster.
  2. Traveler information systems that are tailored for travelers at home and during their trip to inform them of traffic conditions, bus and train arrival times, alternative routing, and the best time for travel. Reliable and timely traveler information complements efforts for Transportation Demand Management (TDM) strategies.
  3. Ramp metering systems that, depending on traffic conditions, manage the flow of vehicles onto freeways and reduce the impact of merging and weaving.
  4. Arterial signal management systems that manage the timing of signals to maximize throughput and minimize delays and provide priority to transit providers (e.g., bus, light rail).

In the future, ITS technologies will automate transit fare collection and parking payments; use vehicle location systems to track trains and buses to give users “real time” arrival and departure information; as well as use onboard systems to detect and avoid collisions.

Within the SCAG Region and San Diego County is the Southern California ITS Priority Corridor, which is one of the four corridors of national significance identified for early ITS deployment by Congress under the Intermodal Surface Transportation Efficiency Act (ISTEA). The ITS plan for this corridor includes major local elements developed by three public-private committees, including LA-Ventura, Orange County and the Inland Empire. The Plan coordinates architecture, standards and institutional issues and also provides the framework for deploying an integrated ITS.

In all, the RTP assigns an incremental \$2.3 billion through 2030 to operational strategies that improve the productivity of the transportation system. This includes \$0.9 billion for ITS and \$1.4 billion for interchange and auxiliary lane projects. The total amount represents just one percent of the overall RTP expenditures, but is expected to produce benefits that are almost an order of magnitude higher. However, to ensure that these investments are targeted and programmed properly, SCAG will work closely with its subregional partners, other regional agencies and the State to develop a framework that elevates the priority of these investments.

Another important operational issue is safety. Improving safety will not only save lives, but also improve mobility and air quality by reducing incidents on the Region’s transportation system. The Plan emphasizes physical improvements to the system to make it safer by investing in safety improvements such as the extension or addition of auxiliary or merging lanes. This will allow a safer transition in traffic flow.

## Congestion Management System (CMS)

In compliance with the Federal requirements—the Metropolitan Planning Regulations CMS is an integral part of the regional transportation planning process, including the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Program (RTIP). There are five Congestion Management Agencies (CMAs)<sup>4</sup> in the SCAG Region and each develops the respective Congestion Management Plan (CMP) for its county. The degree of urbanization varies from one county to another and so does the magnitude of congestion. All CMPs share the same goal of reducing congestion and applying congestion relief strategies, but with different priorities in selecting the related strategies. Therefore, each CMP differs in form and local procedure. By State statute, all CMPs perform the same functions outlined below and are consistent with the federal CMS requirements.

- ❖ **Highway Performance** - Each CMA monitors the performance of an identified highway system. This allows each county to track how this system and its individual components are performing against established standards, and how performance changes over time.
- ❖ **MultiModal Performance** - In addition to highway performance, each CMP contains an element to evaluate the performance of other transportation modes including transit.
- ❖ **Transportation Demand Management (TDM)** - Each CMP contains a TDM component geared to reducing travel demand and promoting alternative transportation methods.
- ❖ **Land-Use Programs and Analysis**- Each CMP incorporates a program for analyzing the impacts of local land-use decisions on the regional transportation system.
- ❖ **Capital Improvement Program (CIP)** - Using data and performance measures developed through the activities identified above, each CMP develops a CIP. This becomes the first step in developing the county TIP. Under State law, projects funded through the Regional Transportation Improvement Program (RTIP) must first be contained in the county CMP.
- ❖ **Deficiency Plan** – Despite the above-stated efforts, when unacceptable levels of congestion occurs, the respective CMP contains a set of provisions for a “deficiency plan” to address the problems. A deficiency plan can be developed for specific problem areas or on a countywide-system basis. Projects implemented through the deficiency plan must, by statute, have both mobility and air quality benefits. In many cases, the deficiency plan captures the benefits of the transportation projects which occur beyond the SCAG RTIP, such as non-federally funded/non-regionally significant projects.

In compliance with the federal CMS requirements, SCAG works with the county CMAs to develop a CMS process for the Region. Under State law, the Congestion Management Programs (CMPs) are prepared and maintained by the respective CMAs (see Table 4.3). CMP activities and resulting data are updated on a biennial basis by each CMA and supplied to SCAG and the respective air quality management district.

<sup>4</sup> The county transportation commissions of Los Angeles, Orange, Riverside, San Bernardino and Ventura are also the CMAs for these counties.

Table 4. 3

**CMPs in the SCAG Region**

<b>County</b>	<b>Congestion Management Agency (CMA)</b>	<b>Congestion Management Program (CMP)</b>
Los Angeles	Los Angeles County Metropolitan Transportation Authority (LACMTA)	2004 CMP for Los Angeles County
Orange	Orange County Transportation Authority (OCTA)	2003 Orange County CMP
Riverside	Riverside County Transportation Commission (RCTC)	2003 Riverside County CMP
San Bernardino	San Bernardino Associated Governments (SANBAG)	2003 CMP for San Bernardino County
Ventura	Ventura County Transportation Commission (VCTC)	2004 Ventura County CMP

*Note: VCTC's 2004 CMP is being completed.*

All counties contained within the Transportation Management Area (TMA) are designated as ozone non-attainment areas with the exception of small portions of Riverside and San Bernardino Counties. Additionally, the entire South Coast Air Basin (SCAB) is designated as a carbon monoxide non-attainment area. Federal funds may not be programmed in the carbon monoxide and ozone non-attainment areas of the TMAs for any project resulting in a significant increase in single occupant vehicle (SOV) capacity unless that project is based on a CMS.

In the SCAG Region, the CMS process comprises the combined activities of the following congestion management elements:

- ❖ The Regional Transportation Plan (RTP)
- ❖ The counties' Congestion Management Programs (CMPs)
- ❖ The Regional Transportation Improvement Program (RTIP)

SCAG's RTP establishes overall long-term mobility policies for the movement of people and goods. The CMP is a county-based, short term program, and the RTIP implements the congestion relief strategies.

## Transportation Demand Management

Transportation Demand Management (TDM) is the all-inclusive term given to a variety of measures used to improve the efficiency of the existing transportation system by managing travel demand. An individual's travel behavior may be influenced by mode, reliability, frequency, route, time and costs, support programs/facilities, perceived personal security and safety, and education. This section and additional information contained in Appendix D-2, comprise the TDM element of the 2004 RTP.

TDM strategies that encourage the use of alternative modes of transportation to the single occupant vehicle include: rideshare (i.e., carpools, vanpools), transit (i.e., bus, rail), and non-motorized modes (i.e., bicycles, walking). Additional TDM strategies include alternative work-schedule programs, such as compressed work-week programs (e.g., 9/80 or 4/40 programs), flextime (e.g., variable work-hour schedules), work-at-home (e.g., home-based businesses/self-employed full time) and parking management (e.g., parking pricing).

The potential effectiveness of TDM in 2030 depends largely on social and institutional commitments that cause individual travelers to choose a mode of travel other than driving alone and funding (e.g., investing in marketing and incentives that change travel behavior). If we were to do nothing beyond our current efforts, the Region would not sustain the current levels of ridesharing, non-motorized and telework/telecommute/work-at-home, let alone expand them over the 2004 RTP period. The Region recognizes the importance of TDM strategies and includes a significant level of funding to meet the TDM goals as summarized in Table 4.4.

**Table 4.4**

### TDM Investments

County	Non-Motorized*	Rideshare**	TDM (Park and Ride Lots, Telework/Telecommute/ Work-At-Home, Parking Management, etc.)
Imperial	\$32,000,000	\$0	*
Los Angeles	\$513,300,000	\$114,300,000	\$186,600,000
Orange	\$115,000,000	\$27,000,000	**
Riverside	\$50,000,000	\$66,400,000	**
San Bernardino	\$39,000,000	\$36,000,000	\$6,500,000
Ventura	\$65,000,000	\$0	*
Regional Total	\$814,300,000	\$243,700,000	\$193,100,000
* Imperial and Ventura County costs for TDM are included in the Non-Motorized amount. ** Orange and Riverside County costs for TDM are included in the Rideshare amount.			

The total investment proposed for non-motorized, rideshare, and TDM is \$1.25 billion; private sector investments (amount unknown) are not included in this table.

## ■ Increasing Rideshare (Carpool and Vanpool)

### Carpool Market Share

In order to sustain the existing rideshare market share and to increase the number of carpools and vanpools, the Region must increase investments in TDM. Just a one percent drop in the carpooling rate translates into more than 40,000 additional vehicles on our freeways and surface streets daily, resulting in an annual increase of 300 million vehicle-miles of travel.

Key RTP recommendations to maintain and increase the existing rideshare market and increase the number of carpools annually include:

- ❖ Program public funds in the RTIP to help maintain the public sector share of the existing rideshare market and to increase the number of carpoolers by 8,000 annually.
- ❖ Provide “seamless” intra- and intercounty carpool services to the regional traveler.
- ❖ Maintain the existing carpool market share and increase ridesharing rates.
- ❖ Support funding for education and outreach to all employers and to the general public in order to increase awareness and participation in ridesharing.
- ❖ Together with county transportation commissions, SCAG will work to further refine existing rideshare tracking, documentation and reporting methods, so as to improve the Region's ability to effectively demonstrate timely implementation of TCMs as required by the Federal Transportation Conformity Rule, as well as to improve reporting on annual average TDM investments and to enhance their effectiveness.

The cost of meeting our carpool and vanpool goals (described in the following section) is approximately \$10 million on an annual basis. The proposed funding identified in Table 4.4 is consistent with this need. To meet the Region's goals, SCAG will work closely with the county transportation commissions to ensure that an adequate level of funding for TDM strategies is programmed, and that appropriate methods of measuring, monitoring and reporting the effectiveness of rideshare programs are developed and deployed.

### Vanpooling

Vanpooling is considered one of the most cost-effective rideshare strategies for long-distance commuters. The effectiveness of vanpooling is based on its ability to reduce vehicle trips and vehicle-miles of travel. Within the SCAG Region, there are approximately 1,400 vanpools (a 30 percent reduction from the 2001 RTP) in operation, carrying an average of 10 riders and traveling approximately 35 miles per one-way trip. Vanpool programs are operated primarily by the private sector, utilizing minimal public subsidy.

Vanpools and transit markets may complement one another. Both can serve trips from suburban communities into central areas or other suburban activity centers. However, vanpools also can serve low-density residential communities, where transit service may not be efficient. Additionally, vanpools can service those traveling on reverse commutes, where transit service may not be cost-effective.

**There are several situations that favor vanpool applications:**

- ❖ The presence of HOV facilities, freeway and/or arterials
- ❖ Limited or high-cost parking around the destination site or both
- ❖ Preferential parking, variable work hours and guaranteed ride-home programs for vanpoolers at work sites
- ❖ Limited or non-existent conventional or demand-responsive transit service

**Key RTP recommendations to expand vanpooling in the Region include:**

- ❖ Formalize and expand partnerships among public and private sector stakeholders to improve delivery of vanpool services regionally
- ❖ Increase the number of commuter vanpools from 1,400 to 5,000 through more effective marketing and the provision of non-monetary public sector incentives
- ❖ Establish a dedicated funding source for planning and implementing vanpool programs and services
- ❖ Expand the provision of vanpool services in the Region through an increase in dedicated public-sector staffing and resources
- ❖ Facilitate a regionally coordinated marketing strategy among the public and private sectors to enhance vanpool programs, increase ridership and improve outreach efforts

## ■ **Increasing Work-at-Home (Telework/Telecommute and Home-Based Businesses)**

Increasing the number of workers who work at home (self-employed, home-based business owners) or who telework/telecommute (wage and salary employees conducting some or all of their work from home) decreases home-based work trips, vehicle-miles of travel, congestion and vehicle emissions. This strategy is generally the result of employer-based decisions.

The 2001 RTP assumed that 2.3 percent and 4.7 percent of all work trips would be reduced due to telecommute and work-at-home in 2010 and 2025, respectively. Recently, the Bureau of Labor Statistics (BLS) documented that 15 percent of the nation's workforce (home-based businesses and wage and salary employees) report they work at home; 4 percent are self-employed in home businesses and do not commute to work; and 2.5 percent telecommute (2001-Bureau of Labor Statistics Population Survey). In the SCAG Region, according to the Association's 2002 Telework Survey, approximately 3.2 percent of the Region's wage and salary workers telework/telecommute from home instead of commuting to their primary place of employment.

National and regional surveys of those who telecommute indicate that it is a lack of support and trust from "management," rather than the provision of equipment or the desire of workers

to telecommute, that hampers the growth of telecommuting. The 2004 RTP, therefore, recommends the following actions:

- ❖ Formalize and expand partnerships among public and private sector stakeholders to increase opportunities for wage and salary workers regionally to telecommute in lieu of daily commuting
- ❖ Promote achievement of a 4–5 percent telework/telecommute goal to increase opportunities for wage and salary workers regionally to telecommute in lieu of daily commuting

## ■ Decreasing Discretionary Trips and Spreading Demand to Non-Peak Periods

Decreasing discretionary person and vehicle trips, especially during peak commute periods, and emphasizing the use of non-motorized modes offers opportunities to reduce demand and to improve the efficiency of the transportation system when the highest level of travel demand normally occurs.

Non-work, discretionary trips made during rush hours exacerbate demand for scarce transportation resources and could be better accommodated if shifted to non-peak periods of the day. The key issue is that providers of medical, shopping, school, recreation and related services often provide services during business hours that overlap commute periods. The 2004 RTP recommends the following:

- ❖ Explore the opportunity to develop and to disseminate educational programs at the county and community level that promote consumers' use of non-motorized travel modes for non-work trips made during commute hours
- ❖ Explore partnerships among public and private sector providers of medical, shopping, school, recreation and related services and programs to identify alternative modes of travel to their establishments and to evaluate their ability to offer consumer services during non-commute hours

## ■ Non-Motorized Transportation

Given the constraints on resources and our emphasis on land-use, the Plan recognizes the importance of non-motorized transportation as an important and integral part of the 2004 RTP. Reinforcing the importance, the Plan proposes over \$733 million in investments on non-motorized transportation over the Plan horizon, which is higher than proposed in any Plan in the past. The proposed funding for non-motorized transportation can be used to implement bikeway expansion projects, create a bicycle-, and pedestrian-friendly transportation environment, induce mixed-use development that promotes biking and walking, and conduct public safety education for bicyclists and pedestrians. The proposed funding level on a county-by-county basis is depicted in Table 4.4.



## Thinking Out of the Box: Land Use-Transportation Connection

### ■ Reality-Based Vision

As discussed in Chapter 1, SCAG and its stakeholders have embarked on an ambitious growth visioning effort that demonstrates the value of land-use and transportation planning integration. The lessons learned from the two bookend scenarios—PILUT I and PILUT II—and the *COMPASS* public workshops were incorporated into the development of a pragmatic land-use growth alternative recommended for the RTP.

The following tenets were developed, through the body of work produced within the Growth Visioning program, to be used as the foundation of the Growth Vision RTP Alternative:

#### ❖ Using infill where appropriate to revitalize underutilized development sites

The Growth Vision Alternative accommodates future growth, makes efficient use of our existing and planned infrastructure and maintains or improves quality of life. The use of infill in aging and underutilized sites provides a means of accommodating growth, revitalizing neighborhoods, districts or communities, and makes efficient use of the existing infrastructure.

#### ❖ Focusing growth along transit corridors and nodes to utilize available capacity

Many existing corridors lack the residential and commercial density to adequately support non-auto transit uses. By intensifying these corridors with people-scaled, mixed-use developments, the existing transit system can more fully realize its potential for accommodating additional trips, taking strain off systems that are already at or over-capacity. This also creates vibrant, walkable communities capable of further reducing the reliance on autos for a variety of trips.

#### ❖ Providing housing opportunities near job centers, and job opportunities, when appropriate, in housing-rich communities

Balancing the location of jobs and housing is an important strategy in meeting regional goals of relieving congestion, reducing commute times and trips, encouraging alternate modes of transportation and improving air quality. The Growth Vision Alternative achieves these goals via an infill strategy by co-locating job and housing centers in targeted livable communities suitable for accommodating additional growth.

#### ❖ Providing housing opportunities to match changing demographics

Changing demographics will have an impact on the Region's economic future. The large "baby-boom" cohort will begin retiring after 2010. Other changes on the horizon include increased immigrant (younger) population, increased household size and lower per capita

income. These changes necessitate variation in housing types offered as well as amenities to serve the changing population.

❖ **Ensuring adequate access to open space**

Demographic trends, the need for adequate job opportunities and shelter, and the Region's historical development pattern set the stage for competing quality-of-life demands. Development patterns in the Growth Vision Alternative emphasize focusing growth in appropriate centers and corridors that make the most efficient use of developed land and minimize encroachment on public open space. This should improve access to existing large-scale and neighborhood-scale open space (e.g., pocket parks).

❖ **Changing land-use to correspond to the implementation of a decentralized regional aviation strategy and its consequent short- and long-term job creation**

The decentralized aviation strategy creates a significant number of high-paying jobs in the short and longer term. The Growth Vision Alternative responds to this by creating the opportunity for well-balanced communities to support the additional workforce.

❖ **Changing land-use to correspond to the implementation of regionally significant major transportation projects and their consequent short- and long-term job creation**

New regionally significant infrastructure, such as highways, rail expansion and Maglev, is planned to serve future housing and job centers in the high desert areas of Los Angeles and San Bernardino Counties and eastern Riverside County. Planned shifts of goods distribution functions to these areas also create long-term employment benefits.

❖ **Incorporating the local input and feedback on future growth received from 90 percent of the jurisdictions in the SCAG Region**

Ninety percent of the 188 jurisdictions participated during extensive public outreach over a two-year period for the development of the RTP Growth Forecast. This technical input and local expertise was critical in developing the RTP. **The Growth Vision Alternative respects local input through 2010 with adjustments occurring only after a ramp-up period intended to establish consensus on an implementation strategy.**

The Growth Vision Alternative was developed through significant work efforts by literally thousands of regional stakeholders. Inputs include: the analyses of the initial five scenarios approved by the Community, Economic and Human Development Committee (and dozens of iterations leading to these five); the *COMPASS* Growth Visioning program, including public workshops, focus groups, public opinion polling, and regional growth principles; and growth capacity, economic and redevelopment analyses. This Alternative is intended to represent a targeted distribution of population, households and employment to best meet the 2004 RTP goals approved by the Regional Council.

By incorporating the best features of PILUT I and PILUT II in conjunction with a decentralized airport demand strategy, regionally significant transportation infrastructure improvements, significant local government outreach contributions, and the *COMPASS* workshops, the Growth Vision Alternative achieves key strategies such as concentration of employment in mixed-use centers, regional jobs-housing balance and intercounty transit. It also maximizes mobility and accessibility within the anticipated 2030 transportation systems and improves air quality by encouraging mixed-use growth patterns that complement and enhance our current and planned transportation investments.

## ***Strategic System Expansion / Capital Investments***

This section describes strategic system expansions for each mode that are critical to maintaining and improving mobility, accessibility, and air quality for all residents of the Region in the face of the growth that will occur over the Plan period as described in Chapter 2.

### **■ Highways and Arterials**

If we were to do nothing beyond completing committed (Baseline) projects by the year 2030, the Region's freeway network mixed-flow lane capacity would increase by less than 10 percent and the arterial system capacity would increase by about 7 percent. On the other hand, the High Occupancy Vehicle, or Diamond Lane network, will nearly double in terms of lane miles by 2030. SCAG recognizes that these three types of facilities will continue to provide the means for most travelers to get to their desired destinations.

#### **Highway and Arterial Investments**

The 2004 RTP contains approximately \$3.1 billion in highway and arterial improvement projects in addition to already-committed or programmed projects. Major categories of the proposed improvements include HOV gap closures, HOV connectors, mixed-flow improvements, toll lanes and high-occupancy toll (HOT) lanes as well as strategic arterial improvements. The 2004 RTP is based on input from the 2001 RTP and priorities submitted by the county commissions and the subregions. The proposed projects and strategies are based on a performance framework established for the 2004 RTP and support the underlying Growth Vision developed through the consensus process. The following provides a brief description of individual categories of improvements proposed in the Plan.

The Highway and Finance Task Force adopted a set of guiding principles in developing the highway improvement strategies. These principles are:

- ❖ Projects that enhance safety and security
- ❖ Projects that fill significant gaps in the freeway and HOV system (examples from the 2001 RTP include the SR-710 gap closure, SR-210 extension, I-10 HOV lane, and the I-605 HOV lane)

- ❖ Projects that relieve significant bottlenecks (examples include truck climbing lanes, mixed flow widening and reconfigurations like the I-215 in San Bernardino, mixed flow continuity projects, and completion of the HOV lanes on I-405 through the Sepulveda Pass)
- ❖ Projects that support improved operational performance (examples include auxiliary lanes and interchange improvements such as better ramps)
- ❖ Projects that improve system connectivity
- ❖ Projects that improve access to airports, cargo facilities, and intermodal centers
- ❖ Projects that maximize efficient use of existing capacity, such as Traffic Management Centers, ramp metering, signal synchronization and other ITS
- ❖ Projects to maintain and preserve the current investment in the highway system
- ❖ Advancing long-range study corridors from the 2001 RTP in high-demand and/or high-growth areas, based upon the findings of the RSTIS process
- ❖ Projects that support land-use goals

### HOV Gap Closure

The completion of the HOV system will be an important step towards meeting future travel demand. A number of HOV projects proposed in the 2001 RTP have already been programmed in the current RTIP. Table 4.5 provides a summary of HOV gap closure projects<sup>5</sup> proposed in the 2004 RTP beyond the Baseline and Tier 2 that are regionally significant.

<sup>5</sup> Although not listed here, the RTP includes toll road projects in Orange County that are considered as "HOV projects and their pricing alternatives" in the 2003 Air Quality Management Plan. These improvements to the San Joaquin, Eastern, and Foothill toll roads in Orange County are Tier 2 projects and are depicted in Exhibit 4.6 and the Technical Appendix.

**Table 4.5**  
**HOV Projects**

<i><b>Project</b></i>	<i><b>Implementation Schedule</b></i>	<i><b>County</b></i>
SR-710 (I-10 to Huntington Dr)	2012	Los Angeles
SR-710 (Huntington Dr to I-210)	2025	Los Angeles
SR-14 (Ave P-8 to Ave-L)	2015	Los Angeles
I-5 (SR-1 to Avenida Pico)	2020	Orange
I-15 (San Diego Co to SR-60)	2020	Riverside
I-215 (SR-60/I-215/SR-91 to San Bernardino Co)	2015	Riverside
I-215 (I-15 to Newport)	2030	Riverside
I-10 (I-15 to Yucaipa)	2020	San Bernardino
I-10 (Yucaipa to Riverside Co)	2025	San Bernardino
I-15 (Riverside Co to I-215)	2025	San Bernardino
I-15 (I-215 to D St)	2020	San Bernardino
I-215 (Riverside Co to I-10)	2015	San Bernardino
I-215 (SR-30 to I-15)	2025	San Bernardino

*Note: Typically, Project Study Reports (PSR) must be completed for these projects in order to compete in the Call for Projects for the RTIP. The total proposed investment for HOV lane projects is \$1.7 billion. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.*

### HOV Connectors

HOV connectors are an important element of the regional HOV system. The connectors are constructed with drop ramps to the HOV lane along the freeway median to minimize weaving conflicts and maintain speeds. A number of HOV connectors are identified in the 2030 Baseline (No Project). The 2001 RTP identified several HOV freeway-to-freeway connector projects. Specific investments in HOV connectors are justified to maximize overall system performance. Table 4.6 provides a summary of HOV connector projects identified in the 2004 RTP as part of the constrained projects beyond the Baseline (No Project) and Tier 2. Exhibit 4.1 depicts the existing HOV system as well as the proposed HOV projects.

**Table 4.6**

### HOV Connector Projects

<i><b>Project</b></i>	<i><b>Implementation Schedule</b></i>	<i><b>County</b></i>
I-5 / SR-170	2025	Los Angeles
I-5 / I-405	2025	Los Angeles
I-405 / I-605	2020	Orange
SR-22 / I-405	2020	Orange
SR-60 / I-215 E Jct	2025	Riverside
I-15 / SR-91	2025	Riverside
I-10 / I-215	2025	San Bernardino
I-10 / I-15	2025	San Bernardino

*The total investment proposed for HOV Connector projects is \$0.6 billion. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.*

### **Mixed Flow**

Gaps in the freeway network create traffic bottlenecks during peak use. Several new mixed-flow freeway lanes are proposed to close gaps, increase capacity in certain congested commuter corridors and address county-to-county travel (especially from population-rich to employment-rich areas). Several routes are under consideration in the Four Corners area, where Los Angeles, Orange, Riverside and San Bernardino Counties converge.

SCAG, Caltrans and Riverside and Orange Counties are exploring methods to approach new corridor development in an environmentally sensitive manner. Regionally significant mixed-flow improvements, proposed in the 2004 RTP beyond the Baseline projects, are shown in Table 4.7. These projects also reflect strategic improvements needed to accommodate our growth vision for 2030. Proposed mixed flow improvements are depicted in Exhibit 4.2.

Additionally, SCAG's Transportation and Communications Committee approved consideration of the following corridor improvement alternatives in the Plan:

#### ***US-101 Corridor***

Potential capacity enhancements will be considered within the existing right-of-way or requiring minimum right-of-way acquisition on the segment from the 101/134/170 interchange to the 23/101 interchange at the Ventura County line. This will be based upon the results of further analysis. Consideration will be given to extensive Transportation System Management (TSM) and transit options, as appropriate, identified in the corridor study, as well as priority near- and midterm TSM and transit options, as appropriate and identified by the City of Los Angeles Community Advisory process for all portions of the 101 Corridor. The study of long term east-west travel in the 101/San Fernando Valley Corridor will be continued as well as further study of improvements to system connectivity and potential operational improvements to key freeway-to-freeway interchanges.

#### ***I-710 Corridor***

The RTP recognizes the I-710 Transportation Corridor (SR-60 to the Port of Long Beach) as a regionally significant transportation corridor as identified in the adopted State of Purpose and Need of the I-710 Major Corridor Study. While additional work is in progress to identify feasibility improvements in the corridor, the Plan identifies existing commitments to replace the Gerald Desmond Bridge as part of the financially constrained Plan, and the need to provide the equivalent of at least two lanes of additional capacity in each direction to move goods and people throughout the corridor. It is anticipated that a Locally Preferred Strategy, based upon the I-710 Major Corridor Study (Alternative B-TSM/TDM) and a hybrid of the MCA Alternatives C, D & E will be adopted by the I-710 Major Corridor Study Oversight Policy Committee, with the concurrence of the Los Angeles County Metropolitan Transportation Authority, Caltrans, SCAG and the Federal Highway Administration. SCAG will amend, as necessary, the 2004 RTP to include improvements as recommended, conditioned upon community acceptance, available funding, and regional air quality conformity requirements. Additional public funding and/or innovative funding may be needed to fully fund the Locally Preferred Strategy.



Table 4.7

## Mixed Flow Projects

<i>Project</i>	<i>Implementation Schedule</i>	<i>County</i>
SR-98 (SR-111 to Dogwood/SR-98)	2012	Imperial
SR-111 (s/o SR-98 to Port of Entry)	2012	Imperial
SR-111 (SR-98 to I-8)	2012	Imperial
SR-111 (SR-78 to SR-115)	2012	Imperial
SR-115 (I-8 to Evan Hewes Hwy)	2012	Imperial
Dogwood Road Corridor /I-8 Overpass	2012	Imperial
SR-710 (I-10 to Huntington Dr)	2012	Los Angeles
SR-710 (Huntington Dr to I-210)	2025	Los Angeles
I-5 Interchanges (Orange Co to Rosemead Blvd)	2025	Los Angeles
SR-57 / SR-60 Interchange	2025	Los Angeles
SR-18 (SR-138 to San Bernardino Co.)	2020	Los Angeles
SR-57 (Orangethorpe to Lambert)	2010	Orange
SR-57 NB (4th through lane at SR-91)	2010	Orange
SR-91 (SR-55 to Riverside Co)	2010	Orange
I-405 (SR-73 to Beach)	2030	Orange
I-10 (Monterey to Dillon)	2025	Riverside
I-15 (I-215 to San Diego Co)	2030	Riverside
I-215 (SR-60/SR-91/I-215 to San Bernardino Co)	2015	Riverside
I-215 (Eucalyptus to I-15)	2025	Riverside
SR-71 (San Bernardino Co to SR-91)	2030	Riverside
SR-91 (Pierce St to Orange Co)	2030	Riverside
I-10 / SR-60 Interchange	2030	Riverside
SR-71 / SR-91 Interchange	2030	Riverside
SR-79 (Ramona to Domenigoni)	2015	Riverside
SR-79 (Hunter to Ramona)	2025	Riverside
CETAP Cajalco/Ramona Corridor	2010	Riverside
I-10 (Yucaipa to Ford westbound)	2015	San Bernardino
I-215 (Riverside Co to SR-30)	2015	San Bernardino
I-215 (SR-30 to I-15)	2025	San Bernardino
SR-210 (I-215 to I-10)	2020	San Bernardino
SR-18 (Los Angeles Co to US-395)	2020	San Bernardino
SR-33 Casitas Bypass	2020	Ventura
SR-118 (SR-232 to Moorpark)	2015	Ventura

*The total proposed investment in Mixed Flow lanes is \$4.0 billion. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.*





	Lane	Connector
Base Year (Existing)		
Baseline (No Project)		
Tier 2		
Plan		

## 2030 High Occupancy Vehicle (HOV) Lane System

Exhibit 4.1



2004 RTP





## 2030 Mixed Flow Improvements

Exhibit 4.2



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2004 RTP

### Toll and High Occupancy Toll (HOT) Lane Corridors

Potential HOT lane facilities include expanded capacity parallel to SR-91 to address east/west congestion in the Riverside County area. While additional work is in progress through the CETAP process to identify and study the feasibility of specific alignments in this corridor, this Plan acknowledges the need for additional capacity in this corridor. Table 4.8 presents the list of Toll Corridor Projects recommended by the RTP. Additional studies on each of these corridor projects will be needed to further define and narrow down the options, determine alignment and obtain necessary community consensus. The Plan will support and respect the local processes as they move forward.

**Table 4.8**

### Planned/Potential Toll Corridor Projects

<i>Project</i>	<i>Implementation Schedule</i>	<i>County</i>
El Camino Real Corridor (US101) (SR-23 to SR-234/SR-170) User-Fee-Backed Capacity Enhancement	2030	Los Angeles/Ventura
SR-91 (SR-241 to SR-71 including toll connection at SR-71)	2020	Orange
SR-91 / SR-241 (Add direct toll-to-toll or HOV connection, SR-241 to/from east SR-91)	2015	Orange/Riverside
CETAP Moreno Valley to San Bernardino Co (pending completion of corridor study)	2030	Riverside/San Bernardino
CETAP Orange Co to Riverside Co (pending completion of corridor study)	2030	Orange/Riverside
<i>The total investment proposed for Toll Corridor projects is \$912 million in public funding and \$3.6 billion in private funding. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.</i>		

### Strategic Arterial Improvements/Smart Street Improvements

Arterial roads account for over 80 percent of the total road network and already carry over 50 percent of total traffic. As it becomes more difficult to add lanes to existing freeways or build new freeways, maximizing the potential capacity of arterials becomes an attractive option to increase overall system capacity in already-developed areas. The Strategic Arterial Improvement concept could involve a combination of widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment and grade separation at critical high-volume intersections to enhance the flow speed and capacity of the arterial.



### Arterial Improvements

In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements. Table 4.9 summarizes the recommended 2004 RTP investments in arterials by county. A complete list of eligible arterial improvements is contained in the Technical Appendix.

**Table 4.9**

### Investment in Arterials

<i><b>County</b></i>	<i><b>Investment</b></i>
Imperial	\$279,500,000
Los Angeles	\$583,200,000
Orange	\$1,343,300,000
Riverside	\$2,899,000,000
San Bernardino	\$703,000,000
Ventura	\$135,000,000
<b>Regional Total</b>	<b>\$5,943,000,000</b>
<i>These projects are over and beyond Baseline and Tier 2 projects provided in the Technical Appendix</i>	

### Soundwalls

Soundwalls are a regional issue associated primarily with freeway improvements. Federal and State laws require construction of noise barriers along freeways under the Community Noise Abatement Program and as part of new freeway construction projects and freeway widening/capacity enhancement projects on existing freeways. Accordingly, all new freeway construction or existing freeway widening costs include soundwall costs.

## ■ Public Transportation System

Public transportation services comprise a major portion of the Regional Mobility Strategy. The goals of public transportation services are to ensure mobility for people without access to automobiles and to provide attractive alternatives for drive-alone motorists or discretionary riders. The public transportation strategies and programs presented in the 2004 RTP were developed with these goals in mind. The Plan invests \$5.5 billion in local bus service, including service for the elderly and disabled, as well as bus stops and transit centers.

Strategies include a significant increase in service availability, major expansion in the use of bus rapid transit, and some restructuring of service to ensure efficient utilization of available capacity. New rapid bus lines will be implemented on heavily traveled corridors and many bus lines will be added or restructured to feed into the existing and proposed urban and commuter

rail system. Table 4.10 presents a list of the major transit investments recommended. A complete list is presented in the Technical Appendix.

Exhibit 4.5 depicts proposed transit corridor development superimposed on the existing system.

### **Bus Rapid Transit**

Bus rapid transit (BRT) is designed to provide fast, high-quality bus service. BRT operates in mixed traffic or in dedicated guide-ways, utilizing low-floor buses, taking advantage of signal priority at intersections, boarding and alighting passengers through streamlined processes, and improving bus stop spacing at planned stations. BRT combines the routing flexibility of bus systems with some of the features of rail transit such as limited stops and streamlined boarding and alighting procedures. It uses specially identified buses stopping only at major intersections/destinations.

The proposed transit program recommends building on the success of existing BRT lines and includes a major expansion of bus rapid transit services throughout the Region. The proposed financially constrained bus rapid transit corridors are designed to connect major activity centers and create a multi-modal system that serves Southern California residents. Several proposed corridors link current bus routes to existing Metrolink stations and urban rail lines. BRT service for these corridors will be more frequent during peak periods. In addition to the re-routing of bus lines, the deployment of shuttles and circulators would feed into the current transit network. These circulators can be very effective when deployed in niche markets.

### **Metrolink Commuter Rail**

Metrolink is the regional commuter rail service that operates in five Southern California counties. Southern California Regional Rail Authority (SCRRA) provides and maintains Metrolink services and facilities. SCRRA is a joint powers authority consisting of the Los Angeles Metropolitan Transportation Authority (MTA), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG) and the Ventura County Transportation Commission (VCTC). The Metrolink system consists of 53 stations. It carries over 36,000 passenger trips and operates 143 trains per weekday.

The Plan invests \$1.8 billion in long-range capital improvements that, when fully implemented, will effectively double the Metrolink System's passenger-carrying capacity. The long-range capital plan includes selective double tracking on critical route segments, switching and signal improvements, communication system improvements, new rolling stock, rolling stock storage/maintenance facilities, new stations and enhancements to existing stations. Plans also include future service expansion on the Redlands and San Jacinto branch lines.

Table 4.10

**Transit Corridor Projects**

<i>Project</i>	<i>Type</i>	<i>Implementation Schedule</i>	<i>County</i>
Green Line Extension (Mariposa/Nash to LAX)	Light Rail	2020	Los Angeles
Crenshaw Transit Corridor (Wilshire to Green Line/LAX)	Transitway	2008*	Los Angeles
Gold Line Extension (Pasadena to Claremont)	Light Rail	2012*	Los Angeles
Metro Center Connector (connecting Gold Line, Blue Line, and Exposition Line in Downtown LA)	Light Rail	2012*	Los Angeles
Red Line Extension (Western to Fairfax)	Heavy Rail	2012*	Los Angeles
CenterLine Extension (final alignment TBD, north to Fullerton or west along PE ROW)	Light Rail	2030	Orange
Harbor Blvd (Brea to Newport Beach)	Bus Rapid Transit	2007	Orange
Westminster Blvd (Santa Ana to Long Beach)	Bus Rapid Transit	2009	Orange
Katella Ave (Orange to Blue Line/Long Beach)	Bus Rapid Transit	2013	Orange
Edinger Ave (Tustin to Huntington Beach)	Bus Rapid Transit	2017	Orange
Beach Blvd (Buena Park to Huntington Beach)	Bus Rapid Transit	2011	Orange
La Palma Ave (Buena Park to Anaheim)	Bus Rapid Transit	2015	Orange
Rapidlink 1A Corona Metrolink Station to Downtown Riverside-UCR	Bus Rapid Transit	2006	Riverside
Rapidlink 2B Downtown Riverside to Moreno Valley	Bus Rapid Transit	2010	Riverside
Coachella Valley	Bus Rapid Transit	2015	Riverside
San Bernardino/Redlands Extension (4th/Mt. Vernon to Grove/Central)	Rail Technology TBD	2014	San Bernardino
Gold Line Extension (Claremont to Montclair)	Light Rail	2014	San Bernardino

*The total proposed investment in Transit Corridors is \$3.0 billion. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.*  
*\* Completion date is contingent upon passage of SB314.*

**Land-Use – Transit Coordination**

The regional transit program calls for increased and better coordination between transit and land-use planning. The Region must develop and adopt a long-term strategy for integrating the planning of commercial, residential and recreational land-uses with the transportation system as well as increasing land-use intensities in areas with higher transit services and access. This integration would complement and maximize the use of the Region's transit system resulting in increased ridership, reduced congestion, and improved air quality.

The Region must focus on encouraging local jurisdictions to include more mixed uses near transit services and facilities. It is mutually beneficial and necessary for transit agencies and local governments to communicate regularly regarding new developments. It is essential for transit operators to be involved in the development review process to ensure the same stature is given to transit services as other public services and infrastructure such as police, fire,

sewers and storm drains. Participation of local and regional transit agencies in the approval process for new developments is strongly encouraged to ensure that transit needs are included in development plans.

### **Transit-Oriented Development**

The regional transit program calls for the local and regional transit and planning agencies to promote transit-oriented developments cooperatively along the major transit corridors. Transit-oriented development (TOD) is a land-use planning tool that promotes pedestrian-friendly environments and supports transit use/ridership. It improves transit accessibility, compact land patterns, walking-friendly environments, and reduced auto use. The TOD emphasis is on the establishment of high-density housing and commercial land-uses around bus and rail stations. TOD includes pedestrian- and non-motorized-friendly streets, mixed-use developments with retail, commercial spaces and schools; as well as parking management and ridesharing ordinances that reduce the amount of land needed for automobile use and parking.

### **Transit Centers**

Balanced local land-use and transportation policies can reduce auto travel and support more pedestrian, mixed-use and transit-oriented developments throughout the Region. Transit facilities, services and centers are best when they are customer-friendly, community-oriented, and well designed. A network of transit-based centers and corridors, supported by infill development, maximizes the use of existing infrastructure, supports transit ridership, reduces automobile air pollution and preserves green space and undeveloped areas. Exhibit 4.3 depicts major activity centers in the Region today and Exhibit 4.4 depicts potential activity centers in 2030. The RTP supports development of a flexible transit system enabling a strong transit linkage between such activity centers.

To encourage the use of transit and ridesharing further, new transit centers and park-and-ride facilities will be constructed in areas that provide access to the freeway HOV network, transit corridors and express buses. Existing transit centers can be upgraded for multi-modal uses that support restructured transit services.

### **Recommendations**

In addition to specific improvements to our public transportation system identified in this Plan, the following are specific recommendations and actions identified by the Regional Transit Task Force for the 2004 RTP:

#### ***Reduce Transit Travel Time***

- ❖ Implement transit priority service in congested corridors.
- ❖ Maximize transit use of High Occupancy Vehicle (HOV) facilities.
- ❖ Improve on-time performance of transit services and/or adjust schedules to reflect actual travel times.
- ❖ Provide real-time electronic wait time signs at transit stops, and real-time transit schedule and route information on the Internet.

#### ***Create Integrated Regional Transit System***

- ❖ Create seamless service for passengers traveling across jurisdictional boundaries in the Region.



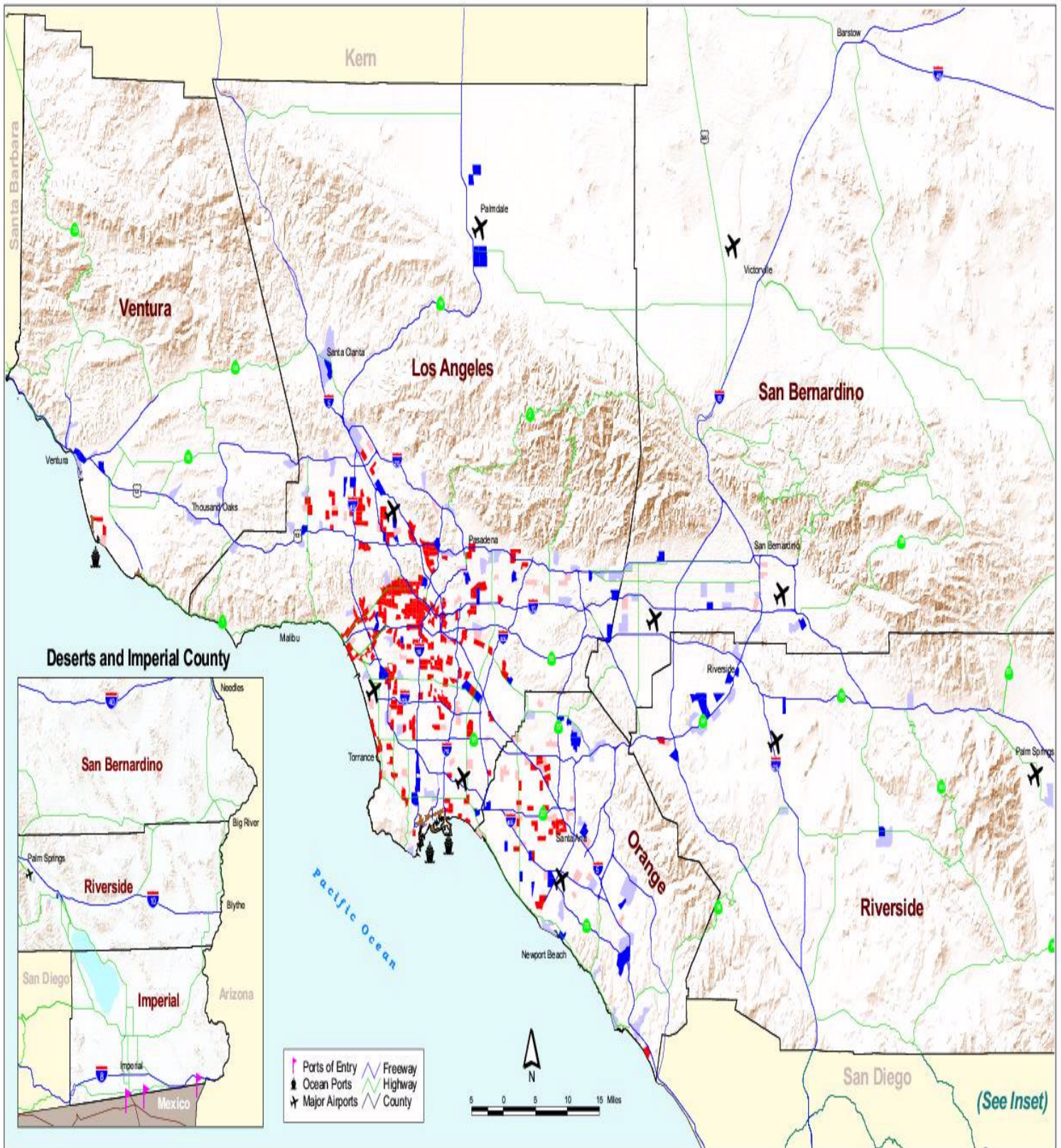
- ❖ Fare structures must be designed so that the transit customer is not penalized when transferring between vehicles, modes or carriers.
- ❖ Structure local collector and distributor transit service to efficiently support line-haul transit corridors and rail systems.
- ❖ Provide outstanding intermodal connections between transit service/facilities and bicycle, pedestrian, auto and intercity transportation.
- ❖ Market transit services at the community level through local outreach activities with commercial and residential organizations.

#### ***Coordinate Transit with Land-Use***

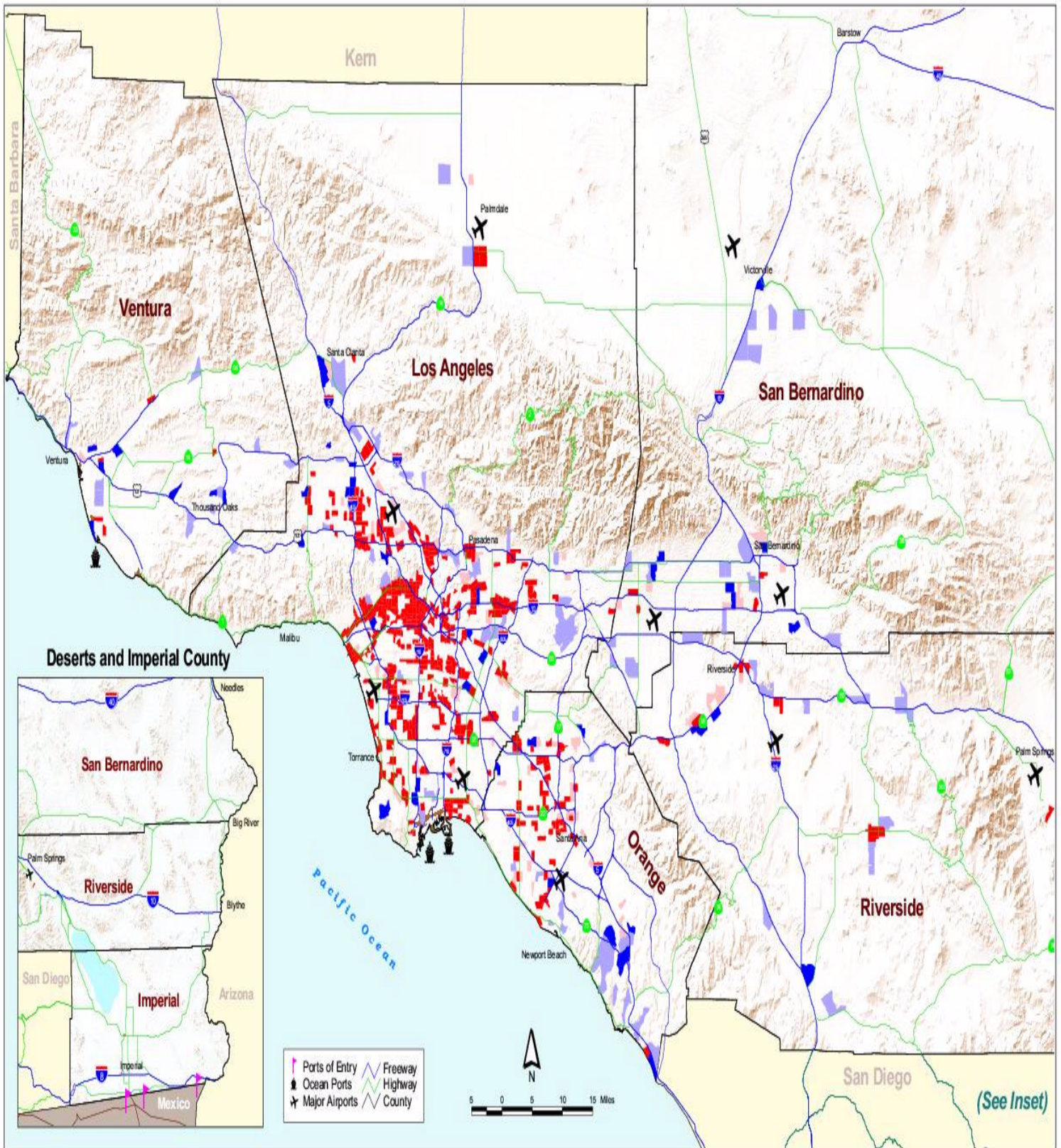
- ❖ Preserve adequate rights-of-way for future transit service in new or expanding corridors.
- ❖ Encourage local jurisdictions to implement transit-oriented development.
- ❖ Encourage local jurisdictions to locate higher densities and commercial land-uses close to corridors that can be well served by transit.
- ❖ Encourage local jurisdictions to orient buildings toward the street and locate off-street parking to the side or rear of buildings.
- ❖ Improve pedestrian access to bus stops and transit centers. Pedestrian access must be direct (not requiring out-of-direction travel), safe and attractive. Techniques to provide safe crossing of streets and roads at bus stop locations must be provided. Auto/transit conflicts should be minimized.
- ❖ Work with local jurisdictions to maintain existing and create additional park-and-ride facilities.
- ❖ Provide educational opportunities for planners to better understand the needs and benefits of transit and for the general public to better visualize and appreciate transit-supportive land-use.
- ❖ Explore potential changes to the California Environmental Quality Act, Congestion Management Program and other legislation; and work with other public agencies throughout the State to advocate for changes that will require no increase in vehicle trips or maintain/increase transit mode split for major developments.

#### ***Support Innovative Financing Strategies***

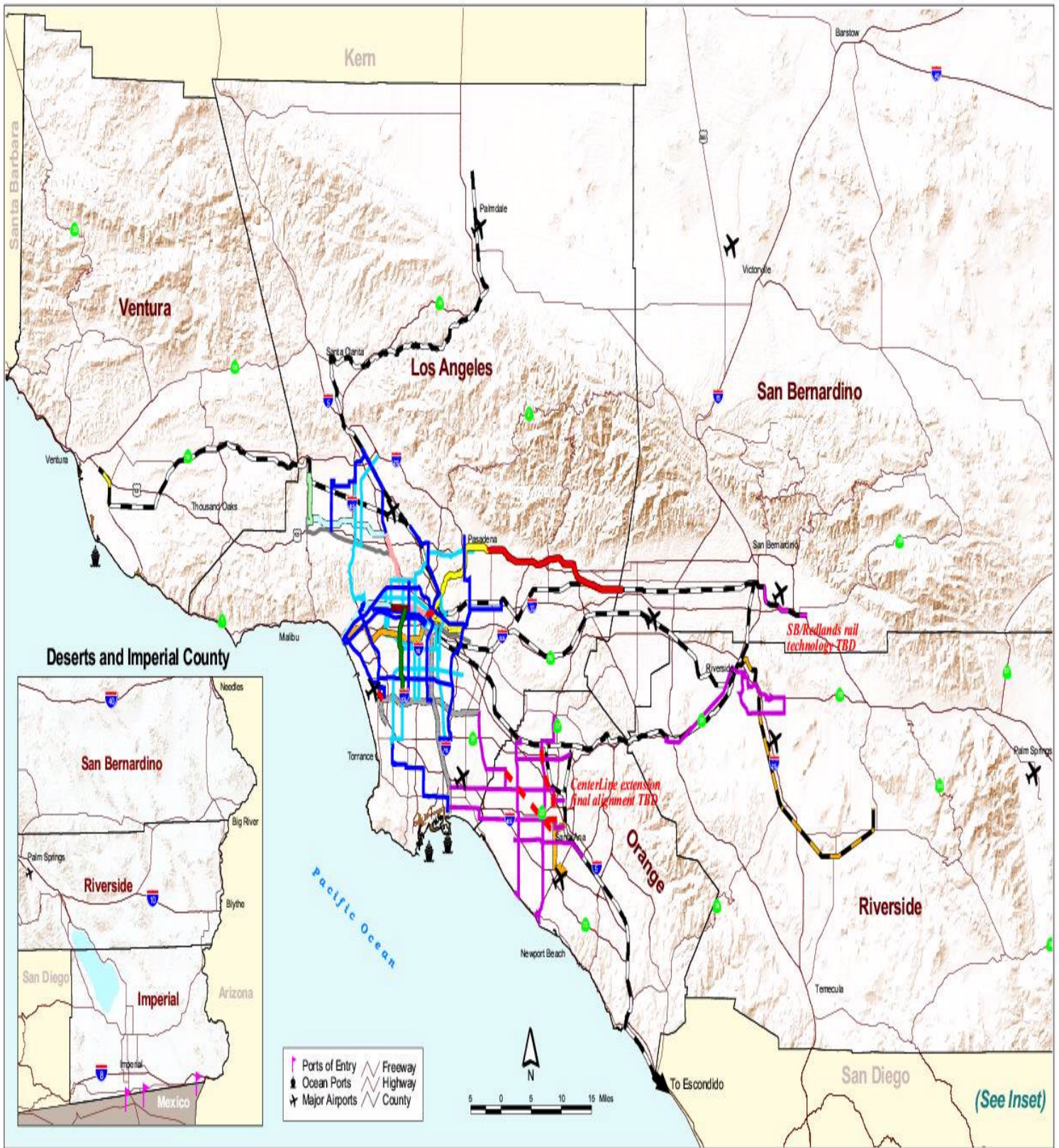
- ❖ Support local revenue sources such as new and/or extended sales tax measures.
- ❖ Encourage fees to support transit in development agreements and as conditions of approval for new development.
- ❖ Encourage in lieu or other fees for transit in exchange for increasing floor area ratios or reducing parking requirements.
- ❖ Consider differentiated transit fares (e.g., reduced fare on off-peak trips, fares based on zones traveled).
- ❖ Encourage employer-based incentives.
- ❖ Leverage local, State, and federal funds for transit investments to the greatest extent possible.











	Light Rail	Heavy Rail	Transit-way	Bus Rapid Transit	Commuter Rail
Base Year (Existing)					
Baseline (No Project)					
Tier 2					
Plan					

## 2030 Transit Corridor System

Exhibit 4.5



SOUTHERN CALIFORNIA  
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2004 RTP

## ■ Goods Movement

Challenges relative to goods movement were described in Chapter 2. The focus of this section is to describe goods movement projects and strategies beyond Baseline and Tier 2 that are intended to address those challenges.

### Roadway Improvements to Address Truck Demand

In the domain of Goods Movement, the regional transportation system will be challenged to accommodate more than double the truck trips, according to modeling of total truck VMT by 2030. The 2004 RTP acknowledges the need for strategies to accommodate future growth in truck traffic. While specific strategy and alignment determinations need further evaluation and consensus building, the Plan assumes corridor improvement needs for a number of corridors summarized in Table 4.11. These corridors are depicted in Exhibit 4.6 as part of the user-fee-backed capacity improvement corridors.

One strategy being explored is the concept of dedicated facilities to accommodate truck traffic. This system would comprise upwards of 140 center-lane miles of dedicated facilities along alignments extending from the San Pedro Bay ports, through the East-West Corridor and out to strategic distribution points northeast or southwest of the urbanized areas. These projects will continue to be studied for the ultimate selection of locally preferred strategies. The Plan will support and respect the local processes as they move forward. However, more specificity is required to include these projects in the regional travel demand model. Therefore, these projects are modeled as two truck lanes in each direction for the 2004 RTP. These assumptions will be replaced by the preferred alternatives upon conclusion of the local processes, as necessary.

**Table 4.11**

### Planned/Potential Additional Toll Corridors

<i>Project</i>	<i>Implementation Schedule</i>	<i>County</i>
I-710 Corridor (user-fee-backed capacity enhancement)	2020	Los Angeles
East-West Corridor (user-fee-backed capacity enhancement)	2030	Los Angeles, Orange, Riverside, San Bernardino
I-15 Corridor (user-fee-backed capacity enhancement)	2030	San Bernardino

Conceptual planning efforts have demonstrated that, given the volume of truck traffic along these alignments and an estimated capital development cost of approximately \$16.5 billion, a per-mile toll ranging from between \$0.38 to \$0.80, and averaging \$0.56 over a thirty-year financing period, would be sufficient to support financing for the development and operation of this system. Applicable to existing and forecast volumes of truck traffic within this nationally significant trade corridor, it is envisioned here that this toll would be imposed and administered by a regionally controlled Corridor Authority in concept. This authority would be instituted



conceptually as a “joint-powers authority” in a fashion analogous to that of the Transportation Corridor Agencies established in Orange County, and would similarly adhere to existing Caltrans and labor relations contracting protocols.

The development of a regional system of user-supported, dedicated facilities offers a viable and potentially self-financing solution for mitigating congestion and reducing mobile source emissions arising from surface transportation operations in Southern California. This also ensures the safe, reliable, and efficient movement of goods essential to the nation’s economy. The general motoring public would benefit significantly in terms of congestion relief, and enjoy greater operational safety and system reliability. Together with improved regional air quality, these environmental and safety advantages suggest that a significant level of public involvement in the realization of facilities would be warranted.

SCAG will complement its original State Route 60 Study, which evaluated the preliminary feasibility of a dedicated truck facility. Additional major investment studies of key regional goods movement corridors are underway for the I-710 and I-15, and the East-West Corridor (SR-210, I-210, I-10, SR-60, and SR-91). Combining insights gained from this set of studies, an outline of the best solutions to address the future growth of truck traffic in the Region can be discerned and allow for a preliminary analysis to ascertain what level of user-supported revenue contribution would be necessary to finance development of such a system. The proposed toll corridors or user-fee-backed capacity improvements are depicted in Exhibit 4.6. SCAG’s existing policy opposes Long Combination Vehicles (LCVs) on non-designated facilities. LCVs include tractor-trailer combinations with two or more trailers that weigh more than eighty thousand pounds.

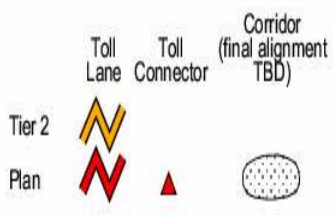
### Truck Climbing Lanes

In addition to the dedicated facilities, the Plan also proposes adding a number of truck climbing lane improvements to the Region’s highway system. The proposed truck climbing lanes above and beyond the currently committed projects identified in Baseline and Tier 2 are listed in Table 4.12. Truck climbing lanes are additional lanes located on the outside of the freeway in an uphill direction, which permit slower-moving trucks to operate at their own pace without reducing the speed of mixed-flow traffic.

**Table 4.12**

### Truck Climbing Lane Projects

<i><b>Project</b></i>	<i><b>Implementation Schedule</b></i>	<i><b>County</b></i>
SR-57 (Lambert to Tonner)	2010	Orange
I-10 (San Bernardino Co to Banning City Limits)	2015	Riverside
SR-60 (Badlands east/of Moreno Valley to west/of I-10/SR-60 Jct)	2030	Riverside
I-15 (Devore to Summit)	2010	San Bernardino
<i>The total investment proposed for Truck Climbing Lanes is \$1.79 million. These projects are over and beyond Baseline and Tier 2 projects that are listed in the Technical Appendix.</i>		



## 2030 User-Fee-Backed Capacity Improvements

Exhibit 4.6



SOUTHERN CALIFORNIA  
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2004 RTP



### **Truck Stakeholder Input and Participation**

Stakeholder input and participation was solicited in three ways: through the Goods Movement Advisory Committee (GMAC), Technical Advisory Committees, and meetings with individual organizations. The GMAC, which meets monthly at SCAG, includes representatives from the California Trucking Association (CTA) and provided stakeholders with the opportunity to review strategies proposed in the RTP to address truck demand. SCAG also established Technical Advisory Committees to solicit input for specific truck studies, such as the Truck-Rail and Truck Count studies. Finally, SCAG representatives met with representatives from the CTA as well as shippers and receivers to discuss truck capacity improvement strategies.

### **Regional Rail Capacity Improvement Program**

Regional rail operations, serving both freight and passengers, are facing the very real prospect of a crippling level of congestion within just a few years' time. This section details a strategy that would provide an institutional and financial structure permitting public participation in the development of regional rail capacity. At its core, this strategy is designed to take advantage of the interest rate differential between private sector financial instruments and public sector tax-credit bonds to leverage the revenue streams' potential of eligible infrastructure investment opportunities. As so far developed, this strategy would enable the level of investment necessary in the Region's East-West Corridor for rail capacity improvements, \$1.2 billion, as well as providing a mechanism for the funding of local rail mitigation measures totaling \$2.2 billion.

Given the projected growth in freight and passenger railroad traffic, the Region faces a serious shortfall in mainline track and intermodal rail yard capacity. The mainlines east of downtown Los Angeles will reach capacity before the end of the decade and will need to be triple-tracked or even quadruple-tracked in some segments. There is also a need to build an estimated 130 highway-rail grade separations east of downtown Los Angeles. Other critical bottlenecks, such as the rail-to-rail crossing at Colton Junction and the two-track limitation of the Badger Bridge crossing of the Cerritos Channel, will need to be addressed. Additional track extensions, centralized traffic control, storage tracks and other yard improvements in the port area will also have to be constructed. Failure to build these improvements could jeopardize economic growth, environmental quality, and national security.

#### ***Conceptual Planning of Rail System Improvements***

With the existing maximum capacity of 50 trains per day per line, a recent SCAG study showed that both BNSF and UP railroads would have track capacity shortfalls on certain line segments by 2010, barring any major improvements.

SCAG examined possible capacity improvements to the East-West Corridor rail lines. The objective was to devise a set of improvements that would maintain present levels of system delay with the number and types of rail operations forecast for 2010 and 2030 traffic levels. This exercise determined that there was a set of capital improvements and operating options that would allow the system to perform at its present level of service while accommodating the forecast increase in both freight and passenger rail operations.

### ***Financial Strategy***

The regional rail capacity improvement program recommended by SCAG would be financed with a revenue stream raised on corridor traffic hauled by UP and BNSF. It is also recommended that discussions take place with other West Coast ports regarding a similar revenue approach to minimize any potential for cargo diversion.

This revenue stream will provide a pool of capital for investment in the improvement program. The investment will be made along the regional mainline rail alignments. The movement of a greater volume of goods through the mainline system will require local congestion mitigation, thus the improvement program provides funding for grade separations.

In order to collect and distribute funds throughout the corridor for eligible capital improvement projects, it is envisioned in concept that a special agency be created. SCAG would have a critical role in the formulation of this agency. The role of this agency, here referred to as the Southern California Railroad Infrastructure Financing Authority (SCRIFA), conceptually would be limited to issuing and servicing debt, administering the revenue stream collection process, and distributing money for approved projects to the railroads and to implementing agencies.

SCRIFA would work with project sponsors to seek grant funding for capital and operating purposes, and would also seek federal loans and issue revenue bonds. Eligible capacity improvement projects in the corridor would include:

- ❖ Freight railroad infrastructure (tracks, signals, yards, rail-to-rail grade separations, and other freight rail facilities)
- ❖ Commuter rail facilities
- ❖ Grade separations of highway-rail crossings

The UP and the BNSF would jointly agree on the priority of alternative freight railroad infrastructure projects. The railroads and the SCRRA (Metrolink) would determine priorities for improving commuter rail operations. SCRIFA, in consultation with all stakeholders, would determine priorities for grade separation investments.

The proposed capacity improvements would include a total investment of \$3.4 billion in Southern California: \$1.2 billion for railroad infrastructure projects and approximately \$2.2 billion in grade separation projects. These capacity improvement projects would be financed by a revenue stream garnered from containers transiting the corridor. SCRIFA would accept a specific revenue stream designed to cover projected debt service and administrative costs.

### **National Coordination**

Southern California recognizes the national precedence of this rail financing methodology, and is working with representatives of the FHWA and other regional planning agencies that are exploring similar initiatives in the Northwest, Mid-West, and Mid-Atlantic regions of the nation. This interregional collaboration and federal coordination will work to ensure that federal legislative and funding programs are structured in a fashion that permits each region to address their particular priorities within a uniform national framework.





 BNSF Mainline	 Union Pacific Mainline
 BNSF Mainline Study In Progress	 Union Pacific Mainline Study In Progress

## 2030 Mainline Freight Rail System Improvements

Exhibit 4.7



 SOUTHERN CALIFORNIA  
ASSOCIATION OF GOVERNMENTS

2004 RTP

### **Rail Stakeholder Input and Participation**

Stakeholder input and participation was solicited in three ways: through the Goods Movement Advisory Committee (GMAC), Technical Advisory Committees, and meetings with individual organizations. The GMAC, which meets monthly at SCAG, consists of representatives from both the Burlington Northern and Santa Fe and Union Pacific railroads and provided stakeholders with the opportunity to review strategies proposed in the RTO to address freight rail demand. SCAG also established Technical Advisory Committees to solicit input for specific rail studies, such as the Los Angeles-Inland Empire Railroads Mainline Advanced Planning Study. Finally, SCAG representatives met with representatives from the railroads and other entities including the Alameda Corridor East Construction Authority and ONTRAC to discuss freight rail capacity improvement strategies.

### **San Diego and Imperial County Railroad Reopening**

There is an effort to revive the line, which will operate from San Diego into Mexico but is closed off from Imperial County in the Carrizo Gorge area. Those involved in the resurrection say that by December, tracks could again become a key freight line between San Diego and Imperial Counties. It is an effort some local officials say could be beneficial to the Imperial County economy because it would make the county a much stronger chain in the State's and nation's transportation links.

Once complete, the line will carve a path for freight trains from San Diego into Mexico and back into the United States where the line flows through Carrizo Gorge into Imperial County. The rail line will end at U.S. Gypsum's Plaster City, where it will meet the Union Pacific railroad, which flows east deeper into Imperial County and toward Arizona and destinations east.

A look even further into the future could have the rail line provide passenger tourist services through the scenic Carrizo Gorge. In the more distant future, that line or a splinter line could be built as a straight line between San Diego and Imperial County without entering Mexico and could open the door to commuter service.

### **Border Crossings**

California's exports increased 17 percent during the first year of NAFTA (1995). In 1999, Mexico became California's top export trade market. California's total trade was over \$30 billion in 2002. Trucks transport 98 percent of this trade. Over three-fourths of this trade has origins and destinations beyond San Diego and Imperial Valley.

Truck crossings are primarily processed at Otay Mesa (San Diego County) and Calexico East (Imperial County) Port of Entries (POEs). Currently, the average daily traffic of trucks traveling into California is 36,000. In 2003, two million trucks traveled northbound/southbound across the California/Baja California border. Figure 4.3 depicts the major truck distributions for the California/Mexico truck movements. The Plan allocated almost \$500 million to NAFTA network projects in Imperial County. Several projects are included in the Baseline and Tier 2 (e.g., SR-111, SR-7 from SR-98 to I-8, SR-78 / SR-111, I-8/Imperial Avenue, SR-98 from SR-111 to SR-7, SR-98 from Kloeke Road to SR-111). In addition, the Plan allocates funding for the SR-115 NAFTA network project over and beyond Baseline and Tier 2.

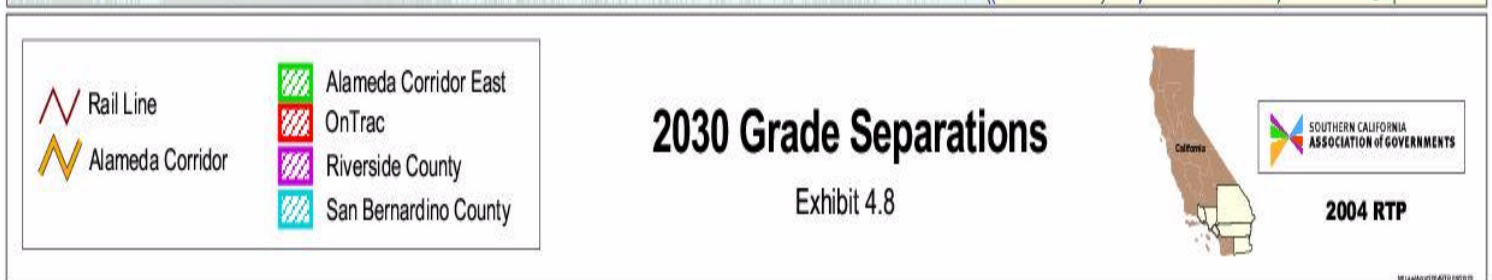


Figure 4.3



Source: Imperial Valley Association of Governments (IVAG)







### Marine Ports

The ports of Los Angeles, Long Beach and Hueneme are planning to invest \$6 billion over the next 25 years on an ambitious infrastructure development program including \$4 billion over the next 10 to 15 years for infrastructure improvement projects being sought by the San Pedro Bay ports. This program will include widening arterial streets, upgrading freeway ramps, separating railroad grade crossings, expanding rail yards, and adding intelligent transportation systems (ITS) to improve ground access management.

### Inland Port

Conceptually, inland ports serve as cargo facilitation centers, where a number of import, export, manufacturing, packing, warehousing, forwarding, customs, and other activities (including Foreign Trade or Enterprise Zones) could take place on site or in near proximity.

Such facilities are being studied and will be considered further for development in San Bernardino, in Victorville at the Southern California Logistics Airport, in Barstow and in March Inland Port. These facilities will function as inland sorting and depository centers for ocean and domestic containers, possibly transported via dedicated rail or truck facilities. At one of these inland ports, containers or trailers can be assembled and sorted into line-haul trains destined for locations outside of the Region. Conversely, shipments arriving on westbound trains could be broken down and sorted for short-haul train delivery within the Region and to the ports. Each of these possible locations will be the subject of further study.

## ■ Maglev System

The Regional High Speed Rail Maglev System will ultimately facilitate the development of a regional airport system, and connect to major activity and multi-modal transportation centers in Los Angeles, Riverside, San Bernardino, and Orange Counties. Without a regional airport in El Toro, the Region needs to further decentralize its future growth in air passenger traffic and air cargo to its regional airports in the northern and eastern portions of the Region. Therefore, the Maglev system becomes more important and critical to the success of SCAG's decentralized regional aviation system.

The Maglev system is the name for an elevated monorail using the world's most advanced technology to move people and goods at a very high speed (up to 310 mph), with a high degree of safety, comfort, and reliability; and it is environmentally friendly. For the past four years, SCAG has been studying the feasibility of deploying four Maglev corridors in the Region:

- ❖ Los Angeles Airport (LAX) to March Inland Port in Riverside County (Moreno Valley)
- ❖ LAX to Palmdale
- ❖ Los Angeles Union Passenger Terminal (LAUPT) to Orange County (Anaheim)
- ❖ LAX to Orange County (Irvine Transportation Center)

In 2002, the Western States Maglev Alliance was formed between SCAG and the California-Nevada Super Speed Train Commission and was approved by the Regional Council. As a result of this alliance, the Plan supports continued analysis of the proposed Las Vegas to Anaheim Maglev segment that passes through Barstow (see Exhibit 4.9).

The SCAG Interregional High Speed Rail system will ultimately grow to cover over 275 miles of Maglev corridors in the SCAG Region, and will move up to 500,000 riders a day. When fully deployed, the Maglev system could complement the regional State highway transportation system. The Maglev program also envisions a longer-term connection to San Diego and other southern airports in the SCAG Region<sup>6</sup>, a connection between San Bernardino and Palmdale via a high desert alignment and interlining with the proposed California State High Speed Rail System. The California State High Speed Rail Authority has been commissioned to do preliminary development work on several north/south corridors. SCAG has supported the Antelope and San Joaquin Valley corridors (Resolution #96-357-1-B). The State of California should coordinate all high-speed rail-planning activities with SCAG and other stakeholders within the State, especially with regard to Maglev, aviation, environment, growth, access, finance and community development.

Three phases have been developed to implement the Maglev deployment program:

- ❖ **Phase 1**, Pre-Deployment Analysis, was completed in October 2003 and includes right-of-way assessment on the freeway system and railroad corridors, assessment of ridership and interaction with other transportation systems, LAUPT capacity analysis, stakeholder outreach, financial feasibility, public/private partnership, technology transfer, and identification of an Initial Operating Segment (IOS).
- ❖ **Phase 2**, Preliminary Engineering, will focus on defining the project to prepare preliminary engineering for the purpose of environmental assessment and analysis (EIR/EIS) for public/private investment.
- ❖ **Phase 3**, Project Deployment Strategy, will complete the investment quality analysis necessary to take the deployment program to the private market. This phase will include an investment-grade ridership and revenue forecast, operation plans, a detailed financial plan, and creation of a public/private consortium for project deployment.

In December 2002, SCAG's Regional Council approved the deployment of a 56-mile IOS of the Maglev system that would connect West Los Angeles via LAUPT to Ontario Airport. It is a component of a 92-mile corridor between LAX and March Inland Port in Riverside County. In selecting the IOS, SCAG considered the RTP performance measures, stakeholder support and environmental issues. At the same time, SCAG's Regional Council approved the advance planning of the LAX to Palmdale corridor and Los Angeles to Orange County corridor (Orange Line). It is anticipated that the IOS is expected to be implemented by the private sector by 2018.

<sup>6</sup> SCAG will undertake a future study to determine the feasibility of extending Maglev services to the southernmost regions of California to connect regional airports in San Diego, Palm Springs, Imperial County and March Inland Port.

The feasibility studies for the four corridors demonstrated that the Maglev system could be constructed and deployed through a public-private partnership structure administered through a public agency, a joint powers authority (JPA), or a public nonprofit (PNP) format using a number of innovative and traditional funding mechanisms. The system would be financed through tax-exempt bonds and Federal Transportation Infrastructure Finance and Innovative Act (TIFIA) program loans that would be repaid through the project-generated revenues. No operating subsidies will be required.

The Maglev Deployment will move SCAG's Region forward through investment in critical infrastructure that will quickly improve surface transportation, enhance goods movement and revitalize the Southland's economy. The initiative is a short- to medium-term fix that will inject over \$26 billion into SCAG's regional economy between the years 2005 and 2018. The Maglev Deployment for the IOS will create approximately 92,000 jobs in the SCAG Region for a total private investment of \$5.5 billion. JPA formation for the IOS and LAX to other corridors is in process.

The completion of the privately funded Maglev projects beyond 2018 will result in improvements in productivity, quality of life, and mobility, and will enhance the Southern California economy. The project milestones are summarized in Table 4.13 and depicted on the map in Exhibit 4.9.

**Table 4.13**

### 2004 RTP Regional Maglev Milestones

<b>Milestones</b>	<b>Capital Costs (\$ billion)</b>	<b>Capital Costs Period</b>
Ontario - LA Union Station - West LA	\$ 5.5	2015 – 2018
Ontario - March Airport	\$ 2.4	2018 – 2020
West Los Angeles - LAX	\$ 0.7	2018 – 2020
LAX - Palmdale Airport	\$ 8.2	2020 – 2024
LAX - John Wayne Airport - Irvine Transit Center	\$ 9.0	2025 – 2030
LA Union Station - Central Orange County	\$ 3.6	2025 – 2030
Orange County - San Bernardino	Not available	2030+
San Bernardino / Victorville	Not available	2030+
Victorville / Palmdale	Not available	2030+
March Airport / San Diego	Not available	2030+

*Note: SCAG will undertake a study to determine the feasibility of extending Maglev Services to regional airports in Palm Springs, Imperial County and San Diego to meet aviation demand.*

### Next Steps

- ❖ Prepare preliminary engineering for the IOS for the purpose of preparation of the federal Environmental Impact Statement (EIS) and/or State Environmental Impact Report (EIR) to a level necessary for public/private investment.
- ❖ Form a Joint Powers Authority (JPA) for the IOS, and market projects to public/private stakeholders.
- ❖ Secure federal, State and local funds by 2010 to complete deployment of the IOS and coalesce community support for operation of the IOS.
- ❖ Seek legislative support at the regional, State and federal levels for the Maglev deployment.







## ■ Aviation

SCAG has updated its regional growth forecast and has developed a new aviation demand forecast and plan that maximizes airport efficiency on a regional scale. The demand numbers by airport are shown in Table 4.14 in terms of million annual passengers (MAP).

**Table 4.14**

### Existing Condition and the Regional Aviation Plan

	Bob Hope	John Wayne	Los Angeles International	Long Beach	March Inland Port	Ontario	Palm Springs	Palmdale	San Bernardino	So. Calif. Logistics	TOTAL
Existing Conditions	4.6	7.9	56.2	1.4	0	6.5	1.1	0	0	0	77.8
Regional Aviation Plan (2030)	10.7	10.8	78.0	3.8	8.0	30.0	3.2	12.8	8.7	4.0	170.0
<p><i>Forecasts for the Bob Hope Airport assume higher passenger activity within the physical constraints of the airport than what is assumed by the airport staff.</i></p> <p><i>The March Joint Powers Authority's focus is on 1) increased military activity; and 2) air cargo. SCAG projections assume commercial air passenger service not yet contemplated by the March Joint Powers Commission. SCAG has a longstanding policy to give priority to military and national defense needs.</i></p>											

Under the Regional Aviation Plan, there is a forecast regional demand of 170 million passengers in 2030, which results in an economic benefit of \$18 billion and 131,000 jobs over a constrained system, as shown in Table 4.15. The 170.0 MAP forecast to 2030 represents a 4.2 percent average annual passenger increase from 2003 levels. The reasons include:

1. The Regional Aviation Plan, in its decentralization of international service from LAX to Ontario and Palmdale airports, will create a significant amount of demand by placing that service closer to populations in fast-growing areas and generating additional economic activity in those areas.
2. Maglev will also create additional demand by virtue of increasing the speed and predictability of the airport access trips.
3. The Region's position as a gateway to the Pacific Rim is expected to capture increasing international travel to and from Asia.
4. The forecast 2030 plan horizon will capture the "baby boomer" retirement. Retirees travel at greater-than-average rates.

Table 4.15

**Aviation-Related Economic Benefits**

<b>Variation</b>	<b>Passengers</b>	<b>Economic Impacts (1998 Dollars)</b>	<b>Jobs</b>	<b>Economic Benefits (compared to Constrained)</b>
Constrained	140.8	\$ 87 Billion	630,000	---
Regional Aviation Plan	170.0	\$ 105 Billion	761,000	\$ 18 Billion / 131,000 Jobs

Under the Regional Aviation Plan, rather than relying on expanding existing urban airports, the future demand for air travel will be largely served by using available capacity at airfields located in the Inland Empire and north Los Angeles County where projected population growth will be best served. Cooperation between airport authorities is necessary to ensure efficient usage of capacity. Using this available capacity promotes a decentralized system that relieves pressure on constrained, urbanized airports and on the Region's surface transportation infrastructure.

**Aviation Guiding Principles**

- ❖ Provide for regional capture of economic development opportunities and job growth created by the prospect of significant regional air traffic growth between now and 2030.
- ❖ Distribute maximum opportunity to Southern California airports where population and job growth are expected to be strong and where local communities desire air traffic for economic development.
- ❖ Reflect environmental, environmental justice and local quality of life constraints at existing airports that operate in built-out urban environments.
- ❖ Reflect that each county should have both the obligation and the opportunity to meet its own air traffic needs where feasible.

**Action Steps**

- ❖ Support capacity expansion at major existing and potential airports to handle anticipated increases in passengers and cargo volume.
- ❖ Mitigate the effects of expanding airports and consider the reuse of former military airfields so that community impacts are minimized.
- ❖ Maximize air passenger and air cargo utilization of outlying airports in less-populated areas.

The Regional Aviation Plan attempts to distribute long-haul and international service to suburban airports, particularly Palmdale. With international service established at the Palmdale and Ontario airports, the Region would have a balanced system of three international airports, similar to the San Francisco Bay Area and New York regions. The Regional Aviation Plan incorporates the proposed Maglev system, which will strategically

connect the major airports and augment a balanced distribution of aviation demand and services in the Region.

The 170.0 total MAP served by the Regional Aviation Plan in 2030 is slightly higher than the 167.3 MAP that was forecast to be served by the 2001 adopted aviation plan by 2025. Given a lower aviation demand forecast resulting from the events of September 11, 2001, and the recent economic downturn, it can be concluded that the new assumptions and concepts incorporated into the Regional Aviation Plan alleviate the substantial loss of capacity associated with eliminating El Toro from the regional system.

The authority for the implementation of SCAG's regional aviation plan currently rests with individual airports. While SCAG forecasts Bob Hope Airport to reach an estimated physical capacity of 10.7 MAP, the facility believes there is less airside and ground access capacity than what SCAG's forecast indicates. The March Joint Powers Authority has indicated its priorities are: 1) increased military activity; and 2) air cargo. SCAG projections assume commercial air passenger service not yet contemplated by the March Joint Powers Commission. SCAG has a longstanding policy to give priority to military and national defense needs. SCAG will continue to work with the airports after the adoption of the 2004 RTP to resolve these issues.

SCAG will also, after the adoption of this RTP, study the feasibility of an international airport in Imperial County connected to San Diego County and the Inland Empire via Maglev. The proposed airport would serve San Diego County demand as well as eastern portions of the SCAG Region.

Under SCAG's Regional Aviation Plan, air cargo service becomes more decentralized. LAX, while serving greater amounts of air cargo, will handle only 27 percent of regional air cargo compared to 75 percent. Southern California Logistics Airport becomes a multi-modal freight-handling facility. In all, March Inland Port, Palmdale, San Bernardino International, and Southern California Logistics go from serving no air cargo to serving a combined 44 percent of the regional total. These projections are summarized in Table 4.16.

Cooperation between airports would be accomplished through the integration of airport master plans and the development of contractual agreements between airports. Also, these agreements would identify complementary roles and market niches between airports, to increase synergy in the system and maximize utilization of available airport capacities in the Region. For example, Los Angeles World Airports (LAWA) would play a key role in integrating master plans for the three airports it operates, LAX, Ontario and Palmdale.

The Regional Aviation Plan requires that an airport "Consortium" be developed through memoranda of understanding between all of the airports in the regional system. The agreements will establish a common framework for coordinating all airport master planning and facility construction consistent with an adopted Regional Aviation Plan. The Consortium would focus on on-airport operations and facilities, and would not have power of eminent domain.

Table 4.16

### Air Cargo Demand - 2030 Regional Aviation Plan (Thousands of Tons of Air Cargo)

	2002		2030	
	Tons x 000	Percent of total	Tons x 000	Percent of total
Bpb Hope	43	1.6%	87	1.0%
John Wayne	15	0.6%	43	0.5%
LAX	1,958	74.7%	2,340	26.8%
Long Beach	58	2.2%	137	1.6%
March	0	0.00%	1,117	12.8%
Ontario	547	20.9%	2,252	25.8%
Palm Springs	0.8	0.03%	128	1.5%
Palmdale	0	0.00%	1,024	11.7%
San Bernardino	0	0.00%	1,092	12.5%
So.Cal. Logistics	0	0.00%	504	5.8%
<b>TOTAL</b>	<b>2,623</b>	<b>100%</b>	<b>8,724</b>	<b>100%</b>

The Regional Aviation Plan is assumed to spur the growth of corporate aviation at both suburban air carrier airports, and general aviation airports in both urban and suburban locations. The creation of more robust flight portfolios at suburban airports is expected to increase the inducement of “catalytic” demand in the Inland Empire and North Los Angeles County.

However, without Maglev, the Regional Aviation Plan would serve only a total of 155.0 MAP, or a loss of 15 MAP to the system (the system would also lose 266,000 tons of air cargo without Maglev, since some cargo would be transported to suburban airports via Maglev). Maglev also increases the market reach of these airports, by drawing passengers from urban core locations who can quickly access the suburban airports via Maglev to catch their desired flights. Maglev is vital to the implementation of the Regional Aviation Plan. The ability of airports to “broker” airlines to provide long-haul and international service to suburban airports will be dependent on the ability to quickly transport long-haul and international travelers at these airports to their destinations around the Region. The Plan requires that the airport Consortium work closely with the Maglev Joint Powers Authority to ensure systems integration.

The Regional Aviation Plan will be carried out by an implementation plan containing the following elements:

- ❖ LAWA will develop an “Integrated Metropolitan Airport System Plan.” This plan will detail how LAX, Ontario and Palmdale will work with each other and other regional airports in

efficiently meeting regional aviation demand as defined in the RTP Regional Aviation Plan.

- ❖ LAWA will provide needed financial support to Palmdale and Ontario airports to construct new facilities and establish long-haul and international service through attractive pricing arrangements and other inducements.
- ❖ Palmdale will become a limited international airport, making all of LAWA's commercial airports international airports.
- ❖ LAWA will broker cooperation from airlines to provide more robust flight portfolios at Palmdale and Ontario, including long-haul and international service.
- ❖ Agreements between LAWA and non-LAWA airports will be developed to promote further decentralization of the regional aviation system. Different roles and market niches for airports will be defined, so as to reduce competition and increase cooperation and coordination between airports, and maximize utilization of available airport capacities in the Region.
- ❖ The agreements will establish a common framework for a regional "Airport Consortium" that will coordinate all airport master planning and facility construction consistent with an adopted Regional Aviation Plan.
- ❖ The Regional Airport Consortium will coordinate with the Maglev Joint Powers Authority to ensure seamless Maglev connections to airports, and increase air passenger ridership via Maglev through integrated fares and other market tools.

### Phasing of Implementation Plan

#### Very short term (to 2006):

- ❖ LAWA finalizes integrated Metropolitan Airport System Master Plan that integrates master plans for LAX, Ontario and Palmdale, and coordinates with plans for other airports in the Region.

#### Short term (2006 to 2010):

- ❖ LAWA initiates discussions with airlines to broker services at Palmdale and Ontario. This will include start-up commuter and short-haul service at Palmdale, and expansion of long-haul and international service at Ontario.
- ❖ LAWA and non-LAWA airports initiate discussions to coordinate service and define complementary roles and market niches between airports.

#### Medium term (2010 to 2020):

- ❖ LAX approaches capacity constraints.
- ❖ LAWA coordinates with airlines to expand long-haul and international service at Ontario Airport and initiates discussions on methods to establish long-haul and international service at Palmdale Airport.



- ❖ LAWA and non-LAWA Inland airports finalize Memoranda of Understanding and contractual agreements for forming a Regional Airport Consortium.
- ❖ Ontario Airport expands terminal facilities.
- ❖ The LAX to March Inland Port Maglev segment is completed.
- ❖ March Inland Port begins passenger service, reaches 1.7 MAP (2015).

**Long term (2020 to 2030):**

- ❖ Palmdale Airport constructs new international terminal facilities.
- ❖ LAWA finalizes agreements with airlines to bring long-haul and international service to Palmdale.
- ❖ LAX to Palmdale Airport Maglev segment is completed.
- ❖ LAX to Irvine Maglev segment is completed.
- ❖ Union Station to Central Orange County Maglev segment is completed.
- ❖ March Inland Port reaches 4 MAP (2025).

**Very long term (after 2030):**

- ❖ March Inland Port reaches 8 MAP (2030).
- ❖ Orange County to San Bernardino Maglev segment completed.
- ❖ San Bernardino to Victorville, Victorville to Palmdale, and March Inland Port to San Diego Maglev segments are completed.

### **Ground Access**

The Regional Aviation Plan will have localized ground access impacts at a number of airports. Particularly, the Regional Aviation Plan will result in a dramatic increase in airport activities (people as well as cargo) at Ontario, Palmdale and a number of other airports. Analysis shows that airport traffic impacts are concentrated near airport areas but that background congestion affects both airports and local communities. A number of freeway and arterial improvements and transit strategies are proposed in the Plan to address the ground access issues as part of the overall transportation investment in the Region. Specific ground access improvements proposed in the Plan are identified in the Technical Appendix.

## ***Transportation Finance: Meeting Our Needs***

SCAG forecasts funding shortfalls over the 2004 RTP period. Numerous factors, including the expiration of local sales tax measures; declining gas tax revenues due to inflation, fuel efficiency and the introduction of alternative fuel vehicles; increasing operations and maintenance/rehabilitation costs; and the State's budget deficit, account for the SCAG Region's financial predicament. The Region would not be able to provide capacity enhancements beyond the short-term commitments without developing a strategy to generate additional transportation revenues.

## ■ Federal Policies Concerning Funding Strategies

Federal policies require the use of revenue sources that are “reasonably expected to be available.” The regulations further indicate that “proposed new revenues and/or new revenue sources to cover shortfalls shall be identified, including strategies for ensuring their availability for proposed investments.”

The SCAG Region’s funding strategies focus on continuing to maintain and protect revenue streams that the Region could potentially lose in the years to come. SCAG’s funding strategies provide sufficient revenue to fund the program of projects proposed in the 2004 RTP. Further, the strategies provide sufficient revenue to fund high-priority projects that ensure the SCAG Region remains in compliance with air quality conformity requirements.

## ■ State Policies Concerning Funding Strategies

The State of California also establishes policies governing the preparation of the Regional Transportation Plan. These policies were formulated in Senate Bill 45 (Chapter 622, Statutes of 1997) and in guidelines adopted by the California Transportation Commission. With regard to the funding element of the RTP, State policies require that financial plans be constrained and represent a “realistic projection of available revenues.” Further, State guidelines permit the inclusion of new funding consistent with the overall policies and program of investments recommended in the RTP.

## ■ Guiding Principles for the Development of Funding Strategies

To facilitate the development of the 2004 RTP funding strategies, the Highway and Transportation Finance Task Force, along with the Transportation and Communication Committee, adopted a set of guiding principles. The guiding principles are as follows:

- ❖ Maximize available resources
- ❖ Ensure revenue is adequate to maintain conformity
- ❖ Enhance regional and local choice in the selection of projects for funding
- ❖ Identify revenue sources that are reasonable and consistent with current funding practices and long-term trends in transportation finance

## ***Recommended Funding Strategies to Implement SCAG's RTP***

Within the framework of the aforementioned guiding principles, the Highway and Transportation Finance Task Force, along with various other SCAG committees, engaged in extensive debates concerning the adequacy and feasibility of various revenue options available to respond to the SCAG Region's funding shortfall. On the basis of the Task Force's actions and policy direction, the following funding strategies for the 2004 RTP were developed:

### **■ Public Funding Strategy**

#### **Protect / Strengthen Existing Transportation Revenues**

In the 2001 RTP, an important strategy was the commitment of sales tax revenues from gasoline to transportation purposes. Proposition 42, approved by the voters in March 2002, provides that these funds will be available for transportation purposes. However, a caveat placed in the State Constitution allows this revenue to be diverted to the State's General Fund if the governor recommends such an action and the Legislature agrees by a two-thirds vote.

The diversion provision introduces considerable uncertainty in the availability of revenue, resulting in a reluctance to commit the funds to long-term transportation projects. To rectify this situation and to ensure that the Proposition 42 revenue is available when needed, the Constitution should be amended to remove this provision. This would make the sales tax on gasoline a truly viable revenue source.

Clearly, the need to stabilize transportation funding is more critical than ever in light of the governor's recent mid-year and budget year proposals to use transportation revenues for addressing General Fund problems. General Fund shortfalls will likely continue in future years, necessitating immediate action to remove the suspension provision in the State Constitution.

Additionally, Caltrans has reported that revenue assumptions made in the 2002 STIP Fund Estimate were overly optimistic. More recent projections indicate that the State Highway Account (SHA) cash balance will fall below planned levels primarily due to lower-than-expected truck weight fee revenues and gas tax receipts. Although Chapter 719, Statutes of 2003 (SB1055), increased fees as of January 1, 2004, to correct for the decline in truck weight fee revenues, there still remains considerable uncertainty regarding federal funding levels. The 2004 STIP Fund Estimate assumes a reduction in federal funding as a result of California's switch from MTBE to ethanol-blended gasoline. Current federal law taxes ethanol-blended gasoline at a lower rate and a portion of the revenue is directed into the Federal General Fund. As states like California switch to ethanol and contribute less to the Federal Highway Trust Fund, federal transportation revenues are expected to decline substantially. California will receive less in federal transportation funding unless the tax on ethanol is adjusted. Caltrans estimates that the ethanol conversion will cost California approximately \$2.8 billion in federal revenues over the five-year STIP period.



### **Continue Local Transportation Sales Taxes Where Necessary/Allow 55 percent Voter Approval for Local Transportation Sales Taxes**

This was a component of the funding strategy in the 2001 RTP. Since the adoption of that Plan, Riverside County voters approved a thirty-year extension of its local transportation sales tax, which will provide the county with about \$3 billion through 2030. Successful extensions of local transportation sales taxes in San Bernardino and Imperial Counties are forecast to provide an additional \$4.3 billion in revenue through 2030.

Chapter 785, Statutes of 2003 (SB314), authorizes the LACMTA to place on the ballot before Los Angeles County voters another half-cent sales tax for transportation. This tax would be limited to a period of six-and-a-half years or less and is anticipated to generate about \$4 billion for specified Los Angeles County transportation-related capital projects and programs. Refer to Technical Appendix B for capital projects and programs as described in Chapter 785, Statutes of 2003 (SB314). The implementation schedules that are currently assumed for these specified projects are contingent upon the passage of this sales tax measure. To facilitate the passage of these taxes, the State Constitution should be amended to allow passage with a 55 percent majority instead of the currently required two-thirds majority. Several Constitutional Amendments have been introduced in the 2003-2004 session of the State Legislature that would provide for such a change.

With relatively positive public opinion poll findings, the Ventura County Transportation Commission (VCTC) is now examining the possibility of imposing a half-cent sales tax measure for transportation purposes in Ventura County. SCAG continues to monitor VCTC's efforts and intends to incorporate projected revenue estimates resulting from the sales tax initiative along with the specified projects upon further availability of information and progress.

### **Maximize Motor Vehicle Fuel User Fee Revenue Through Pay-As-You-Go and Debt Financing (Assuming an Adjustment to the Gas Tax Rate to Maintain Historical Purchasing Power)**

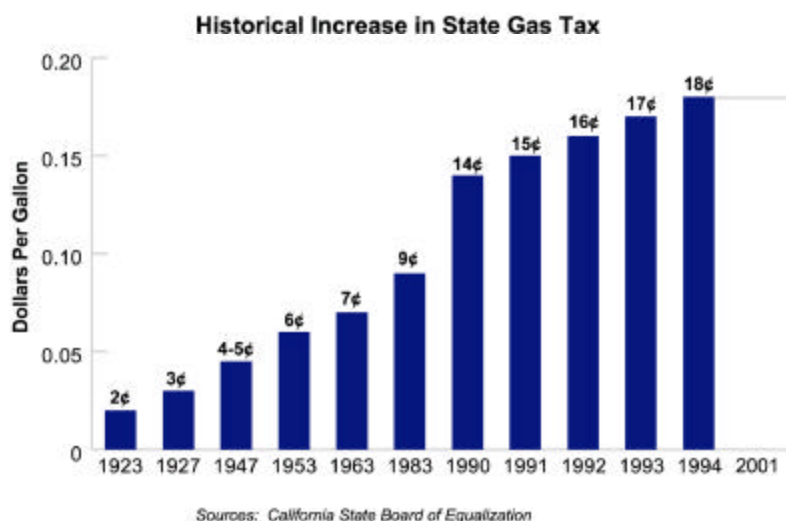
An important element in the 2001 RTP's revenue strategy was a five-cents-per-gallon increase in the motor vehicle fuel tax in 2010 and an additional penny annually between 2011 and 2015, for a total increase of ten cents. For the 2004 RTP, it is proposed that a portion of the revenue stream from that increase be committed to the issuance of debt to raise up-front revenues to fund RTP projects. The remaining portion of the revenue generated from the incremental increase in the State gas tax could be utilized for direct pay-as-you-go projects. Additionally, GARVEE bond financing (Grant Anticipation Revenue Vehicles) would be employed wherever feasible, pledging future federal funds to accelerate the 2004 RTP project development process.

This proposal would require State implementation legislation. However, with the existing authorization of debt financing using federal fuel tax revenue (GARVEEs), the federal government has already established a precedent that the State of California should follow.

State transportation revenues are collected primarily from the State motor vehicle fuel excise tax. The current State fuel excise tax was last increased between 1990 and 1994, when it was doubled from nine cents to 18 cents per gallon. If an assumption were made that the Legislature would provide for a similar increase sixteen years later in 2010, the revenue

stream for the RTP would be enhanced. As a matter of historical reference, the gas tax was first imposed at two cents per gallon in 1923. Subsequently, the tax rate increased as shown in Figure 4.4. In light of past legislative actions to adjust the tax rate, it is reasonable to assume further rate adjustments during the 2004 RTP time horizon.

**Figure 4.4**



### **Review Methods for Collecting Revenues from Alternative Fuel Vehicles**

The fuel tax component of SCAG's public funding strategy seeks to offset the decline in gasoline tax revenues from inflation, fuel efficiency and alternative fuels. It includes the option to further study the implementation of a revenue raising mechanism on alternative fuel vehicles should the market penetration rate of such vehicles be substantial.

It is clearly important to understand that the Region's transportation revenue estimates are affected by the actual market penetration rate of alternative-fuel and fuel-efficient vehicles over the Plan period. If the penetration rate remains very low, the gasoline tax revenue loss would be minimal. However, it is likely that sources of energy for the motor vehicle fleet will become quite diverse and fuel efficiency of engines can be expected to increase during the time frame of the 2004 RTP (horizon year 2030). Recognizing this, SCAG will seek funding in the federal transportation reauthorization legislation to conduct research on alternative transportation user fee collection mechanisms for various fuel/vehicle engine combinations.

### **■ Development Mitigation Fee**

Currently, the San Bernardino Associated Governments (SANBAG) is considering the feasibility of a development mitigation fee in addition to the County's Measure I renewal program (sales tax extension program). A Development Mitigation Committee was formed to determine whether there is a need for additional mitigation of the impacts of private development on regional transportation facilities. Upon further study, the committee will recommend to the SANBAG Board of Directors the most appropriate approach to

development mitigation, as deemed necessary. Initial revenue estimates for some approaches identified for further analyses indicate that about \$1.5 billion could be generated for arterials, grade separations, and interchanges in San Bernardino County.

## ■ Private / Innovative Funding Strategy

### **Consider the Feasibility of HOT Lanes for New Facilities**

Given limited public funds to support transportation infrastructure development, high occupancy toll (HOT) lanes would be considered for some new facilities. Projected toll revenues could be substantial based upon some initial analyses of corridors within the SCAG Region.

### **Pursue User-Fee - Supported Project Financing for Major Regional Investments Where Applicable**

There are several one-of-a-kind major regional projects proposed in the 2004 RTP, including the proposed Maglev system, special purpose facilities, and freight railroad system improvements. These proposals are to be debt financed and backed by user charges. The proposed debt financing instruments, including tax-exempt revenue bonds and tax credit bonds, facilitate public-private partnerships—most critical to addressing some of the Region's infrastructure funding issues.

In recognizing that limited public resources are available to address many large-scale transportation projects in the Region, this strategy simply provides that the Region will consider the feasibility of using innovative public-private partnership arrangements to develop transportation infrastructure where such financing strategies are applicable. These financing arrangements are most applicable where we have identified projects capable of generating their own streams of revenues to offset capital development, operations and maintenance as well as any associated debt service costs.

Potential financing structures identified for the three proposed projects include:

#### ***Special Purpose Facility Financing***

- ❖ Total development cost for a regional system of 140 miles including potentially the I-710 corridor, the East-West Corridor, and the I-15 corridor, is estimated to be \$16.5 billion.
- ❖ Net revenues generated from tolls would be leveraged to issue tax-exempt revenue bonds.
- ❖ Capital financing instruments may include a combination of senior-lien tax-exempt revenue bonds and federal credit enhancement in the form of loans (at 33% total eligible capital cost—TIFIA).
- ❖ For the preliminary financial analysis, tolls were assumed to be imposed at an average rate of \$0.56 per mile.



***Regional Rail Capacity Project Financing***

- ❖ Total development cost for this component is estimated to be \$3.4 billion (\$1.2 billion for capacity improvements and \$2.2 billion for grade separations).
- ❖ The financial analysis relies upon taking advantage of the interest rate differential between private sector financing costs and tax-credit bonds, a public financing mechanism that would substitute federal tax credits for interest payments.
- ❖ It is assumed that a revenue stream equivalent averaging \$5.39 per TEU would be generated to finance the program.

***Maglev Project Financing***

- ❖ The cost for this initial operating segment (IOS) is estimated to be \$5.5 billion.
- ❖ The financing structure for this project relies upon the issuance of tax-exempt revenue bonds and TIFIA loans.
- ❖ An average charge of \$0.37 per passenger mile would be needed to finance the project.

**■ Funding Components and SCAG's Regional Checkbook**

Table 4.17 itemizes each new funding component. The components, taken together, make up the SCAG Region's public and private funding strategies in developing a financially feasible and comprehensive 2004 RTP. Furthermore, Table 4.18 outlines SCAG's regional checkbook for the 2004 RTP.

Table 4.17

### 2004 RTP Revenue Sources (2002-2030, In Billions \$2002)

Baseline Public Revenues	Extends existing local, State, and federal funds for transportation out to the year 2030.	\$120
RTP Funding Strategies	<b>Public Funding:</b>	\$31
	• Cont./Explore Local Transportation Sales Taxes (Imperial, Los Angeles, and Bernardino Counties) - \$8 billion	
	• Maximize Motor Vehicles Fuel User Fee Revenue (State increase or Regional imposition totaling 10 cents: 5 cents in 2010 and 1 cent per year from 2010 to 2015) - \$21.7 billion	
	• Development Mitigation Fee (San Bernardino County) - \$1.5 billion	
	<b>Private / Other Funding</b>	\$62
	• Includes HOT lanes and User-Fee – Supported Major Regional Investments – Public-Private Partnerships.	
	• Other funds may include those local revenue sources not fully or traditionally captured in the RTP financial plan.	
<b>Total Revenue</b>		<b>\$213</b>

Table 4.18

### 2004 RTP Regional Checkbook by County (2002-2030, In Billions \$2002)

County	Baseline Revenues	Committed Costs	Net Balance	Public Funding Strategy	Total Public Funding Available for 2004 RTP Investments
Imperial	\$1.1	\$0.8	\$0.3	\$0.3	\$0.6
Los Angeles	\$76.0	\$79.4	(\$3.4)	\$15.4	\$12.0
Orange	\$20.5	\$15.8	\$4.7	\$3.0	\$7.7
Riverside	\$12.1	\$6.0	\$6.1	\$2.6	\$8.7
San Bernardino	\$8.0	\$10.9	(\$2.9)	\$8.8	\$5.8
Ventura	\$2.7	\$2.5	\$0.2	\$1.1	\$1.3
<b>Total</b>	<b>\$120.4</b>	<b>\$115.4</b>	<b>\$5.0</b>	<b>\$31.2</b>	<b>\$36.1</b>